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A CHECKLIST OF  
THE SPERMATOPHYTES  
OF MOUNT MULANJE, MALAWI

A.M. Strugnell





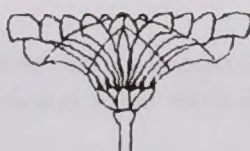
Cover photographs (A.M. Strugnell):  
front, *Widdringtonia whytei* (Mulanje cedar) at the top of the Ruo Valley;  
back, Likabula valley just above the *Brachystegia* woodland & *Xerophyta splendens*.

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### **Volume 34**

A.M. Strugnell

### **A checklist of the Spermatophytes of Mt. Mulanje, Malawi**

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## Preface

The main purpose of this annotated inventory has been to bring together information about the higher plants that grow on Mt. Mulanje. Knowledge of the plants that grow on Mt. Mulanje is far from complete but I hope this checklist will provide a baseline of information for management decisions in respect of the sustainable use and conservation of the massif's vegetation.

Although I have become quite familiar with the species that grow on the mountain over the period of time that I have been compiling the checklist, I regard myself as the compiler rather than an expert on the flora and have therefore depended greatly on the expertise of others on the various families and genera for advice. Everyone has been most generous with their help in access to specimens, identifications and any other points needing to be discussed. Enthusiasm for the project has often been evident due to the importance given to the Mt. Mulanje flora but, also, not least because it recognises the immense contribution that Jim and Betty Chapman have made to the understanding of the flora of Malawi in general and Mt. Mulanje in particular. For years, Jim has been a committed and vociferous advocate of the overriding need to conserve the unique flora of Mt. Mulanje, especially the Mulanje Cedar (*Widdringtonia whytei* Rendle). Jim is still in possession of much raw data on the structure of the forests from his ecological surveys carried out in the 1980s. This would, at the very least, provide an historical baseline to measure the current state of affairs by and is much in need of the treatment accorded to his similar work in Nigeria by his daughter, Hazel (Chapman & Chapman 2001).

The question that kept arising while I have been engaged in compiling this checklist has been 'what name shall I use?' I endeavoured to apply consistent criteria, i.e. the name used in Flora Zambesiaca accounts or the latest published name. Species delimitation problems and differing taxonomic opinions caused difficulty in a few cases, the latter being highlighted under the species concerned. If no Flora accounts were available (including The Flora of Tropical East Africa and The Flora of Southern Africa), I made a decision on the information that was available from specimen collections.

The area I have taken as constituting the Mulanje massif comprises all inside the perimeter road, i.e. the lower slopes and high rocky areas of Mt. Mulanje, Mchese Mt. and The Fort Lister Gap. I have also included a few collections from Chikomwe Hill, Lichenya Forest Reserve and the Segregation Plot at Mimosa Tea Research Station, which are just outside the perimeter road and which are strictly speaking not Mt. Mulanje, but they are probably an indication of the natural vegetation that once occurred just the other side of the road, i.e. dry, scrubby vegetation, lowland stream-fringing forest and transition woodland respectively.

Numbers are sometimes useful for comparison with other areas. The statistical summary of the checklist is as follows:

Number of **Families** = 138 (where Fabaceae is included as one family with three subfamilies)

Number of **Genera** = 625

Number of **Species, subspecies and varieties** = 1319

Number of **Endemic taxa** = 71 (i.e. 5.3% of the spermatophyte flora)

4 endemic species are trees (i.e. 5.7% of endemics)

**The ten largest families (number of taxa):** Fabaceae (124); Orchidaceae (122); Asteraceae (99); Poaceae (90); Rubiaceae (82); Euphorbiaceae (46); Cyperaceae (37); Lamiaceae (35); Acanthaceae (31); Scrophulariaceae (20).

**Families well represented by endemic taxa:** Asteraceae (15); Poaceae (7); Orchidaceae (5); Euphorbiaceae (5); Lamiaceae (3); Ericaceae (3); Gesneriaceae (3).

Other families have one or two endemics.

Only one species, *Widdringtonia whytei* Rendle, has been listed as endangered (Farjon & Page 1999) and the wild populations of the cycad, *Encephalartos gratus* Prain, are reported to be greatly



threatened and reduced (Chapman 1989). There is insufficient data on other species for a similar assessment of their status but, in the light of habitat destruction in recent years as well as increased pressure on the natural resources of the massif, others may also be threatened. I hope the information presented in this checklist and the paper on the endemics (Strugnell 2002) will highlight the species and areas that would profit from further investigation.

Alison Strugnell  
February 2004



## Acknowledgements

The checklist became a reality in the first instance due to the support for the project from Dr. Stephen Harris, Curator of the Oxford University Herbaria. For this, and advice throughout its duration, I am hugely grateful.

I should like to thank the Winston Churchill Memorial Trust for awarding me a Travelling Fellowship that allowed me to see Mt. Mulanje for myself. The experience was immensely useful from many points of view and enabled the project to be meaningful rather than just being an herbarium exercise.

My visit to Malawi and the trips up Mt. Mulanje were most profitable and enjoyable due to the hospitality and organisation provided by Iris and (the late) David Cornelius. I am indebted to them and also to John Killick for information about the mountain. I should also like to thank Augustine Salubeni, Edwin Kathumba, Cecilia Maliwichi-Nyirenda and (the late) Aubrey Kalonga-Banda of the National Herbarium in Zomba (MAL) for help with field work, and specimen collecting in particular.

I am also indebted to the Trustees of the Druce Bequest in the Department of Plant Sciences, University of Oxford, U.K. for covering other travelling expenses incurred during the course of the project.

I am very grateful to the Curators of the following herbaria for access to their collections through loans or visits: the Natural History Museum, London, U.K. (BM), the National Botanic Garden of Belgium, Meise, Belgium (BR), the Royal Botanic Garden, Edinburgh, U.K. (E), the Royal Botanic Gardens, Kew, U.K. (K), the National Herbarium, Zomba, Malawi (MAL) and Missouri Botanical Garden, St. Louis, U.S.A. (MO). I should also like to thank E, K and MO for lists of determinations when Chapman specimens from Mt. Mulanje in their herbaria were identified.

In addition, many people have been most generous with their time to provide species identifications and/or distributions, as well as being willing to discuss particular problems or provide useful information. I very much appreciate the contributions by all the following, which have helped formulate the names and information given in the checklist: Robert Archer (*Pleurostyliia*, Celastraceae. PRE); Henk Beentje (*Helichrysum*, Asteraceae. K); Diane Bridson (Rubiaceae. K); Dick Brummitt (several families and general advice. K); Bill Burt (Streptocarpus, Gesneriaceae; Burmanniaceae. E); Susan Carter (Aloaceae; *Euphorbia*. K); Tom Cope (Poaceae. K); Petra de Block (*Ixora*, Rubiaceae. BR); Chris Fagg (*Acacia*, Fabaceae: Mimosoideae. FHO/Brasilia); Aljos Farjon (*Widdringtonia*, Cupressaceae; *Encephalartos*, Zamiaceae. K); David Goyder (Asclepiadaceae. K); John Grimshaw (general identifications); David Harris (*Aframomum*, Zingiberaceae. E); Tivvy Harvey (Lamiaceae and general help. K); William Hawthorne (general identifications. FHO); Olive Hilliard (Santalaceae. E); Peter Jannerup (*Lasianthus*, Rubiaceae. C); Isobyl la Croix (Orchidaceae. K); Shakki Kativu (*Chlorophytum*, Anthericaceae. SRGH/K); Sigrid Liede (*Sarcostemma*, Asclepiadaceae. UBT); Peter Linder (*Restio*, Restionaceae. BOL/G); Mike Lock (Fabaceae: Caesalpinioideae; Xyridaceae. K); Serena Marner (*Faurea*, Proteaceae. OXF); Simon Mayo (Araceae. K); Alan Paton (*Plectranthus* & *Solenostemon*, Lamiaceae. K); Roger Polhill (Loranthaceae, Myricaceae. K); Gerald Pope (Asteraceae; Hypoxidaceae. K); Alan Radcliffe-Smith (Euphorbiaceae. K); Lulu Rico (*Albizia*, Fabaceae: Mimosoideae. K); Brian Schrire (Fabaceae: Papilionoideae. K); Dave Simpson (Cyperaceae. K); Bernard Verdcourt (Fabaceae: Papilionoideae. K); Kaj Vollesen (Acanthaceae. K) and Rosemary Wise (map outlines. Oxford). I should also like to thank Mr. Paul Bamps (BR) for his useful comments on the manuscript.

The task of producing a checklist would have been much more tedious and time-consuming without the benefit of a specially tailored database system. I am grateful to Denis Filer for advice on and the use of the BRAHMS database (Botanical Research And Herbarium Management System), which he developed for purposes such as this.



Finally, but by no means least, I thank Jim and Betty Chapman for their great interest in and support of the checklist project from the beginning. They have always been very willing to answer my queries, lend photographic slides and provide specific comments or snippets of information that I used in the checklist, cited as 'personal communications'. Indeed, this particular checklist would not even have begun without the excellent collections they produced over a long period of time.

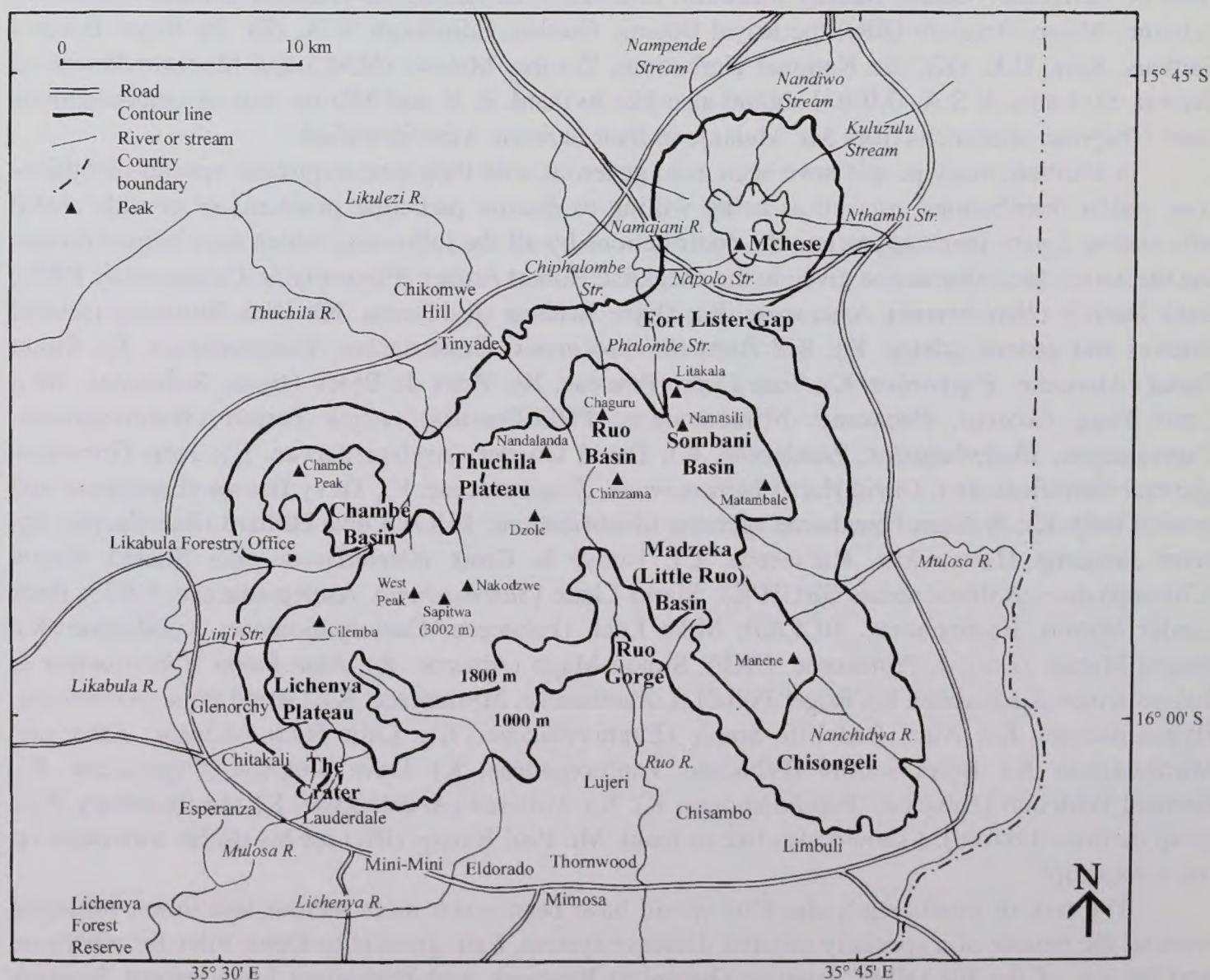


Figure 1. Map of Mt. Mulanje showing the main collecting localities.



## Part 1

### Introduction

#### The history behind the Checklist

Mt. Mulanje is a prominent, isolated massif in south-eastern Malawi reaching approximately 3000 m at its highest point (Sapitwa). It lies 2.5 km from the Mozambique border, and is a designated Forest Reserve. The mountain covers an area of about 640 km<sup>2</sup> and is constricted in the middle to form eastern and western lobes. The Fort Lister Gap separates the Mchese peak from the main mass of Mt. Mulanje. All are included in the concept of the Mt. Mulanje massif (fig.1).

Mt. Mulanje has been a major focus of attention for geologists and naturalists for well over a century, since the colonisation of south central Africa by Europeans. There have been three major botanical explorations, in the 1890s by Whyte, in the 1940s by Vernay and in the 1980s by Chapman. Serious botanical exploration of the Mulanje massif began with Mr. Alexander Whyte's expedition in 1891. The report of the plants collected on this expedition (Britten *et al.* 1894) provides the first description of the species found on the Mulanje massif. The next major expedition to Mt. Mulanje, sponsored and led by Mr. Arthur S. Vernay of the American Museum of Natural History, did not take place until 1946. Mr. L.J. Brass was responsible for the plant collections over the four-week period of the expedition from late June. The taxonomic work was undertaken at the Royal Botanic Gardens, Kew (K), the species described being published in three parts (Brenan 1953, 1954 a & b). Neither of these expeditions visited the eastern lobe of the massif nor, it seems, had any other people at that time. Visiting botanists and resident foresters continued plant collecting on Mt. Mulanje and describing the species through the rest of the 20<sup>th</sup> century, the first to collect from the eastern side of the mountain being E.I. Newman and T.C. Whitmore in 1956. Following on from his initial collections on Mt. Mulanje in 1957-58, James D. Chapman began his prolonged exploration of the massif in the 1980s. Whilst Acting Curator of the National Herbarium of Malawi (MAL), he regularly visited the massif, first with E.J. Tawakali in 1981 and then with I.H. Patel in 1982. From 1985, together with his wife E.G. Chapman, he was engaged on a 3½ year botanical and ecological survey of Mt. Mulanje sponsored by the National Geographic Society in collaboration with the Missouri Botanical Garden Herbarium (MO). During this time he was resident at the foot of Mt. Mulanje, which enabled him to collect at different times of the year from virtually all parts of the massif, including the scarcely-explored Mchese Mt. The result of this activity was a comprehensive collection from the whole of the massif.

For the first time, the Chapman collections enabled a checklist of the species of the Mulanje massif to be a feasible proposition. Chapman sent a set of his collections to the Daubeny Herbarium (FHO) in Oxford, primarily for work on the evergreen forests of Malawi (Dowsett-Lemaire & White 1990; White *et al.* 2001). During this time, Alison Strugnell was responsible for compiling an identification list of the whole collection, including herbaceous material. Determinations were being made at FHO, mainly for the woody plants. The 1985-89 collections, other than the set held at Oxford, were distributed by MO to the Royal Botanic Garden, Edinburgh (E), K, and MAL. Over several years, determination lists from E, K and MO were received by FHO. In order to make the accruing information more widely available, it was decided to use the identification list as the basis of a checklist of the species of Mt. Mulanje (excluding ferns and mosses).

Although the tree and shrub species had been identified at FHO and K, much time in the next few years was spent on the herbaceous species. Collections by others were added to the embryonic checklist. Specimens collected by L.J. Brass, H.M. Richards, R.K. Brummitt and I. la Croix from K, O.M. Hilliard & B.L. Burtt from E & K, E.I. Newman & T.C. Whitmore from the Natural History Museum, London (BM) were incorporated. Selected later collections by others, up until 2002, were added if they provided additional records.



Dudley (1999) carried out an initial evaluation of the Mt. Mulanje ecosystem for the Mt. Mulanje Conservation Trust (MMCT), using information on the fauna and flora available at the time. In it he made some proposals for the management and conservation of the mountain's biodiversity. However, no inventory of the species that occur on the Mulanje massif exists on which to base concrete plans. Carrying on from the earlier published species lists, this checklist of higher plants is an inventory of the species recorded to date, along with as much up-to-date information as possible in a concise form. The published volumes of Flora Zambesiaca and the 'Evergreen Forest Flora of Malawi' (White *et al.* 2001) contain more detailed descriptions and keys. These and the checklist should provide a useful body of information for future work on Mt. Mulanje and that will undoubtedly lead to the amendment and expansion of the list as more information becomes available.

### **Official and biological status**

Mt. Mulanje was gazetted as Public land and given Forest Reserve status in 1927, although it had been administered as such from about 1894 due to it being Malawi's main source of softwood. At the time, this was as much for the preservation, controlled cutting and planting of Mulanje Cedar (*Widdringtonia whytei*) as the protection of the water catchments (Chapman 1995). All land above the forest reserve boundary, at approximately 1000 m, falls under the jurisdiction of the Forestry Department. The boundary has been adjusted on several occasions since it was first put in place, due to encroachment by cultivators on the lower slopes (Chapman 1994a), each reducing the size of the Reserve (Sambo 2001). Concern mounted throughout the 20<sup>th</sup> century over the degradation of the forests on the massif. After discussions between the government and interested parties, the MMCT was set up in 1991 to develop an integrated conservation and management plan for the sustainable use of resources and to conserve the distinctive flora. Legally the mountain is still under the auspices of the Forestry Department but there is now an agreement with the MMCT to coordinate and collaborate on a programme of sustainable utilization of natural resources (Sambo 2001).

The botanical importance of the flora has also been recognised (Beentje *et al.* 1994). Mt. Mulanje was listed and described as one of the botanically-rich sites on continental Africa in greatest need of protection (Droop 1985) and as a Centre of Plant Diversity in Africa (site no. 22 in a list of 26) in a report compiled by the World Conservation Monitoring Centre (Groombridge 1992). The flora of the massif is of botanical and biogeographical importance due to its afro-montane species, the number of endemic species it supports, species at the limit of their range and its affinities to the South African flora.

### **Geography and geology**

Mt. Mulanje lies between 15° 45' and 16° 03' S and 35° 29' and 35° 47' E. It is the highest mountain in southern tropical Africa and forms part of the disjunct chain of mountains that runs down the eastern side of Africa from Ethiopia to the eastern Cape region in South Africa (fig. 2). The sheer sides of the main mountain rise abruptly from the surrounding plains at 600-700 m to high plateaux at 1800-2000 m. The plateaux region is not flat but consists of wide areas dissected by deep, forested river valleys, such as the Lichenya Plateau, or broad river basins, such as the Sombani Basin and the Ruo Basin, separated by rocky peaks. Several peaks rise from the plateaux area to more than 2500 m, the highest of which is Sapitwa (c. 3000 m). Mchese Mt. (2160 m) comprises deep gorges separated by narrow precipitous spurs.

The Mt. Mulanje massif is composed of hard, metamorphic rock, such as granite, quartz-syenite and syenite, and has the attributes of an inselberg, albeit a very large one (Porembski 1996). Bauxite deposits were discovered in 1924 and occur on the western side of Mt. Mulanje, mainly on the Lichenya Plateau. There is no evidence of volcanic activity, 'The Crater' on the western side being formed by differential erosion. Dixey (1927) and Garson & Walshaw (1969) provide fuller accounts of the geology of the massif.



The whole massif is of great importance as a water source for the surrounding plains as almost all the rivers supplying the area have their origin on Mt. Mulanje or Mchese Mt. (Chapman & White 1970; Dudley 1999). The Ruo River is the most important and biggest, being fed by many of the other smaller rivers and streams, including the Lichenya and Likabula rivers. Practically all of the upland valleys are abruptly truncated at the near-vertical sides of the massif. The larger rivers have gouged deep, narrow gorges out of the rock, whereas the smaller streams tip over the edge of the precipitous sides as waterfalls (Chapman 1962). The Ruo River does both, descending nearly 200 m as a waterfall into a gorge (Dudley 1999).

## Climate

The Mulanje massif experiences three seasons; dry and cool (May-August), dry and hot (September-October) and wet and warm (November to April).

A single rainy season extends from November to March or April. The peaks and high ridges form a semi-circle open to the moist air from the south-east. However, there is a great variation in the amount of rainfall falling over the relatively small area of the massif. The south to south-eastern side of the mountain is wetter than the northern side. For instance, more than 3000 mm per annum falls on the Lichenya Plateau compared to just over 2000 mm per annum on the Thuchila plateau, which faces northwest. Similarly, on the lower slopes, Lujeri Tea Estate receives approximately 2400 mm per annum whereas Likulezi Estate, below Thuchila, receives less than 900 mm per annum. Short spells of mist and cold rain, the 'chiperone' weather (so called because it comes from the direction of Mt. Chipirone in Mozambique), alleviate the dry season in July and August. Mchese Mt., similarly, is also wetter on its southern and south-eastern sides and is far enough east to not be affected by Mt. Mulanje's rain shadow effect.

The mean annual temperature on the Mulanje plateaux ranges from 13-19° C, with regular frosts occurring from July to early September. Snow has been known to occur occasionally on the peaks of Mt. Mulanje. On the lower slopes, below 1000 m, the mean annual temperature is approximately 25° C. Temperature records are scarce and diurnal fluctuations can only be surmised from comments made in various reports. For instance, daytime shade temperatures of 35-38° C are normal at Likabula forestry station (c. 900 m) in the hot season (October) but on the plateaux (1800-2000 m) around 21° C is more usual. In the cool season (July), the plateaux daytime temperatures are around 13-15° C, falling to zero or below at night (Chapman 1962).

## Vegetation

The combination of the structure, altitude and climate of the Mulanje massif influences the types and extent of the vegetation. However, Chapman & White (1970) found no evidence for the occurrence of distinct vegetation types or assemblages of plant species associated with individual rock types, as is the case with the serpentine soils of the Chimanimani Mountains in Zimbabwe (Wild 1964). Also, although the checklist was not concerned with the analysis of the vegetation on Mulanje, no special combination of species was apparent from the bauxite areas during its compilation.

The lower slopes, between the perimeter road and the foot of the sheer escarpment, are clothed by *Brachystegia* woodland on the west, north and east sides of the massif. Some species listed in the checklist only occur on the very dry, lower slopes on the northern sides of Mulanje and Mchese, e.g. *Acacia karoo* Hayne, *Acacia polyacantha* Willd. ssp. *campylacantha* (A. Rich.) Brenan, *Albizia tanganyicensis* Baker f. On the wetter, southern slopes, most of the original vegetation has been cleared to make way for tea plantations. Remnants remain only in forest fringing the streams where these pass through the tea estates, as isolated mature trees left to provide shade or in Transition Woodland (consisting of evergreen forest trees and shrubs with miombo elements).

On the plateaux, the vegetation consists of fire-induced montane grassland with evergreen forest largely confined to the shelter of the ravines. *Widdringtonia whytei* Rendle, the Mulanje Cedar,



grows on Mulanje and Mchese mainly between 1800-2100 m, although it is found up to 2200 m and down to 1500 m in the deep gorges that interrupt the limiting escarpment on the drier side of the mountain. It occurs either in almost pure stands or more often as a super-canopy tree of evergreen afromontane forest. Unfortunately, healthy cedar forest is now almost non-existent after decades of logging, both legal and illegal (Chapman 1994a, b; 1995). Above 1500 m, in the gorges of the Lichenya, Ruvo and Little Ruvo rivers on the southern side, the evergreen forest contains afromontane species such as *Cassipourea malosana* (Baker) Alston, *Rapanea melanophloes* (L.) Mez., *Podocarpus latifolius* (Thunb.) R.Br. ex Mirb., *Chrysophyllum gorungosanum* Engl. and, more locally, *Rawsonia burtt-davyi* (Edlin) F. White (Dowsett-Lemaire 1988; White *et al.* 2001). The mid-altitude forests (defined as having 25-50% afromontane elements) occur down to 900 m in the Crater, Ruvo Gorges and Chisongeli on the southern, wetter side of the mountain, lower than anywhere else in Malawi (Dowsett-Lemaire 1989). During recent decades, at Chisongeli especially, these formerly extensive species-rich forests, dominated by *Newtonia buchananii* (Baker) G. Gilbert & Boutique, have been reduced to a fraction of their original area (White *et al.* 2001).

The rocky peaks and ridges above about 2100 m support dense, lichen-hung montane thicket and open montane shrubland. Zonation of vegetation is less clear on Mt. Mulanje than on the mountains of East Africa and there is no alpine zone. However, Mt. Mulanje is high enough to support an ericaceous zone but it is fragmentary and mostly occupied by steep slopes and bare rock. The vegetation mainly occurs in deep clefts and gullies (White 1978). The shrubby *Widdringtonia nodiflora* (L.) Powrie replaces *W. whytei* in the transition zone between montane forest and the ericaceous zone proper, associated with *Agarista salicifolia* (Lam.) G.Don., *Erica benguelensis* (Welw. ex Engl.) E.G.H.Oliv. and *Podocarpus latifolius* (Thunb.) R.Br. ex Mirb. This stunted montane forest gives way to shrubby thickets that are scattered amongst the rocky terrain and include, for example, *Erica benguelensis*, *E. whyteana* Britten, *E. microdonta* (C.H.Wright) E.G.H.Oliv., *Muraltia flanaganii* Bolus, *Aloe arborescens* Mill. and *Aloe mawii* Christian, as well as the grasses *Rytidosperma davyi* (C.E.Hubb.) Cope and *Eragrostis volkensii* Pilg. (Chapman & White 1970; White 1978). Several endemic species are found at these altitudes, for example, *Crassula sarcocaulis* Eckl. & Zeyh. ssp. *rupicola* Toelken var. *mlanjiana* R.Fern., *Erica austronyassana* Alm & T.C.E.Fr., *Xerophyta splendens* (Rendle) N.Menezes and *Kniphofia mulanjeana* S.Blackmore.

Rocky habitats are found at all altitudes, from the boulder-strewn *Brachystegia* woodland, the outer precipitous slopes, sheet rock on the plateaux to the sparsely covered high peaks. Many of the species that occur on the rocky peaks also occur in the zones below, wherever suitable rocky habitats occur (Chapman 1962; White 1978). For instance, *Coleochloa setifera* (Ridl.) Gilly occurs on the high peaks as well as among the huge boulders of the woodland on the lower slopes and *Aloe mawii* also occurs on sheet rock just above the *Brachystegia* line.

Seepage areas occur at all altitudes and are often associated with slab rock. Woody plants tend to be excluded from this habitat which is rich in mosses, sedges and small plants, such as *Drosera dielsiana* Exell & Laudon and *D. madagascariensis* DC., *Eriocaulon mulanjeanum* S.M.Phillips, *E. dregei* Hochst. var. *sonderianum* (Körn) Oberm., *Restio mahonii* (N.E.Br.) Pillans, *Restio mlanjensis* H.P.Linder and the *Xyris* species, *X. congoensis* Büttner, *X. makuensis* N.E.Br., *X. obscura* N.E.Br. and *X. straminea* L.A.Nilsson.

The numerous streams and rivers on the massif provide damp habitats on their banks and, when in full spate in the rainy season, also submerge many of the plants growing either in the rivers or on the banks. The gullies and gorges protect the forest species from the grassfires that sweep parts of the mountain.

### The Afromontane region and endemism

White (1978: 507) stated that "The floras occurring on the summits and upper slopes of the African mountains south of the Sahara and north of the Cape in South Africa are so different from the surrounding 'lowlands' that they cannot be regarded as forming a series of upland facies of the latter." He goes







However, the number of species confined to a single mountain appeared to be few in number, probably not exceeding 5% of the total flora (White 1978). Percentages referring only to the woody forest flora are much lower, e.g. 1% or less (Dowsett-Lemaire 1989) and c. 3% (White *et al.* 2001) but general endemism studies are producing figures around the order of magnitude predicted by White, e.g. 5.9% for the Usambara Mts. in N.E. Tanzania (Iversen 1991); 5.3% for the Mulanje massif (Strugnell 2002); 4.6% for the Chimanimani Mts. in Zimbabwe (Wild 1964); 4% for the north-eastern Transvaal escarpment (Cowling & Hilton-Taylor 1994) and 2.2% for Mt. Cameroon (Cable & Cheek 1998). Larger mountainous areas, by comparison, exhibit much higher levels of endemism, e.g. 25-30% for the Eastern Arc mountains in East Africa (Lovett 1993) and 30% for the Eastern Drakensberg Mountains in South Africa (Hilliard & Burt 1987).

A total of 71 species, sub-species or varieties (Spermatophytes only), of which four (5.7%) are forest trees, have been listed as endemic to the Mt. Mulanje massif based on current knowledge of distributions (tab. 1). This represents a considerable increase to the list of 30 endemic species produced by Wild (1964) and is probably due to collecting activity and the publication of more taxonomic treatments in the intervening years. Future taxonomic interpretation and botanical exploration of adjacent areas (especially the mountains over the border in Mozambique which are poorly documented at present) will undoubtedly modify these figures, more likely downwards than upwards. Most of the endemics are herbs, grasses and small woody plants which occur in high altitude grassland, shrubby habitats or rocky terrain (>1750), a situation which mirrors the findings of others in southern Africa (Wild 1964, Hilliard & Burt 1987, Cowling & Hilton-Taylor 1994). However, a small number (c. 7%) occur at lower altitudes (down to 900 m) in the forested gorges on the southern side of the massif. By comparison, 12% of the endemic species of the Usambara Mts. are trees and 93% of the 169 endemic species occur in forest habitats (Iversen 1991). Interestingly, no endemic tree species are known from the Chimanimani Mts. in Zimbabwe nor from the southern Natal Drakensberg, eastern Highlands and north eastern Transvaal escarpment in South Africa, all to the south of Mt. Mulanje in the Afromontane region.

In addition, there are a number of species that have a very restricted distribution at high altitude in southern Malawi or that occur only on or around Mt. Mulanje and on the mountains in adjacent Mozambique, which can be considered to be near-endemics. A further set of species seem to occur on Mt. Mulanje and on one or two more distant mountains in Mozambique, Zimbabwe or South Africa or in the north of Malawi (tab. 2).

Table 1. A synopsis of the species endemic to Mt. Mulanje.  
(updated from Strugnell 2002).

\* only recorded from Mt. Mulanje (Wild 1975).  
♠ previously placed in a more widespread species, *Lotus discolor* E.Mey., by Brenan (1953).  
† placed in a wider-ranging species (*Kniphofia splendida* complex) by Kativu, Flora Zambesiaca 12 (3).

Species	Family
Forest trees	
<i>Widdringtonia whytei</i> Rendle	Cupressaceae
<i>Rawsonia burt-davyi</i> Edlin	Flacourtiaceae
<i>Pyrostria chapmanii</i> Bridson ssp. <i>chapmanii</i>	Rubiaceae
<i>Vepris elegantissima</i> F.White & C.M.Pannell	Rutaceae
Other small trees	
<i>Rhus monticola</i> Meikle	Anacardiaceae



Table 1. Continuation

Species	Family
<b>Shrubs</b>	
<i>Bothriocline milanjiensis</i> (S.Moore) Wild & G.V.Pope	Asteraceae
<i>Helichrysum densiflorum</i> Oliv. <i>sensu stricto</i>	Asteraceae
<i>Helichrysum polioides</i> B.L.Burt	Asteraceae
<i>Helichrysum whyteanum</i> Britten	Asteraceae
<i>Lopholaena whyteana</i> (Britten) Phil. & C.A.Sm	Asteraceae
<i>Vernonia milanjiensis</i> S.Moore	Asteraceae
<i>Cleome densifolia</i> C.H.Wright	Capparaceae
<i>Maytenus acuminata</i> var. <i>uva-ursi</i> Brenan	Celastraceae
<i>Erica milanjiensis</i> Bolus	Ericaceae
<i>Erica austronyassana</i> Alm & T.C.E.Fr.	Ericaceae
<i>Erica nyassana</i> (Alm. & T.C.E.Fr.) E.G.H.Oliv.	Ericaceae
<i>Clusia brassii</i> Brenan	Euphorbiaceae
<i>Clusia conferta</i> Hutch.	Euphorbiaceae
<i>Euphorbia mlanjeana</i> Leach	Euphorbiaceae
<i>Phyllanthus confusus</i> Brenan	Euphorbiaceae
<i>Tephrosia whyteana</i> Baker ssp. <i>whyteana</i>	Fabaceae
<i>Dissotis johnstoniana</i> Baker f. var. <i>strigosa</i> Brenan	Melastomataceae
<i>Protea caffra</i> Meisn. ssp. <i>nyassae</i> (Rendle) Chisumpa & Brummitt	Proteaceae
<i>Psychotria</i> sp. A of Flora Zambesiaca	Rubiaceae
<i>Xerophyta splendens</i> (Rendle) N.Menezes	Velloziaceae
<b>Herbs - Dicots.</b>	
<i>Isoglossa milanjiensis</i> S.Moore	Acanthaceae
<i>Pimpinella mlanjensis</i> C.C.Towns.	Apiaceae
<i>Aster milanjianus</i> S.Moore	Asteraceae
<i>Berkheya johnstoniana</i> Britten	Asteraceae
<i>Helichrysum bullulatum</i> S.Moore	Asteraceae
<i>Helichrysum dichroölepis</i> Brenan	Asteraceae
<i>Helichrysum sordidum</i> S.Moore	Asteraceae
<i>Helichrysum syncephalum</i> Baker	Asteraceae
<i>Nidorella umbrosa</i> Wild *	Asteraceae
<i>Senecio peltophorus</i> Brenan	Asteraceae
<i>Senecio whyteanus</i> Britten	Asteraceae
<i>Impatiens quisqualis</i> Launert	Balsaminaceae
<i>Impatiens shirensis</i> Baker f.	Balsaminaceae
<i>Begonia nyassensis</i> Irmsch.	Begoniaceae
<i>Cyphia brummittii</i> Thulin	Campanulaceae
<i>Cyphia decora</i> Thulin	Campanulaceae
<i>Crassula globularioides</i> Britten forma <i>pilosa</i> R.Fern.	Crassulaceae
<i>Crassula sarcocaulis</i> Eckl. & Zeyh. ssp. <i>rupicola</i> var. <i>mlanjiensis</i> R.Fern.	Crassulaceae
<i>Euphorbia whyteana</i> Baker f.	Euphorbiaceae
<i>Lotus mlanjeanus</i> J.B.Gillett ♠	Fabaceae
<i>Geranium mlanjense</i> Laudon	Geraniaceae
<i>Streptocarpus dolichanthos</i> Hilliard & B.L.Burt	Gesneriaceae
<i>Streptocarpus milanjianus</i> Hilliard & B.L.Burt	Gesneriaceae
<i>Streptocarpus nimicola</i> Hilliard & B.L.Burt	Gesneriaceae
<i>Plectranthus crassus</i> N.E.Br.	Lamiaceae



Table 1. Continuation

Species	Family
<i>Plectranthus mandalensis</i> Baker	Lamiaceae
<i>Stachys didymantha</i> Brenan	Lamiaceae
<i>Anagallis oligantha</i> P.Taylor	Primulaceae
<b>Herbs - Monocots.</b>	
<i>Kniphofia monticola</i> S.Blackmore †	Asphodeliaceae
<i>Kniphofia mulanjeana</i> S.Blackmore	Asphodeliaceae
<i>Cyperus spissiflorus</i> (C.B.Clarke) K.Schum. Syn. <i>Pycreus spissiflorus</i> C.B.Clarke	Cyperaceae
<i>Tetraria mlanjensis</i> Raynal	Cyperaceae
<i>Gladiolus bellus</i> C.H.Wright	Iridaceae
<i>Brownleea mulanjiensis</i> H.P.Linder	Orchidaceae
<i>Cynorkis brevicealcar</i> P.J.Cribb	Orchidaceae
<i>Polystachya johnstonii</i> Rolfe var. <i>johnstonii</i>	Orchidaceae
<i>Polystachya purpureobracteata</i> P.J Cribb & la Croix	Orchidaceae
<i>Satyrium afromontanum</i> la Croix & P.J.Cribb	Orchidaceae
<i>Alloeochoete geniculata</i> Kabuye	Poaceae
<i>Alloeochoete gracillima</i> Kabuye	Poaceae
<i>Alloeochoete oreogena</i> Launert	Poaceae
<i>Digitaria trinervis</i> Van der Veken	Poaceae
<i>Eragrostis fastigiata</i> Cope	Poaceae
<i>Eragrostis sylvae</i> Cope	Poaceae
<i>Panicum nymphoides</i> Renvoize	Poaceae
<i>Restio milanjanus</i> H.P.Linder	Restionaceae

Table 2. Species that occur on Mt. Mulanje and other mountains in southern Malawi and/or adjacent Mozambique (near endemics) and species that appear to have a wider but disjunct distribution.  
(updated from Strugnell 2002).

- \* placed in a wider-ranging species, *Ficus ottoniifolia* (Miq.) Miq. var. *ulugurensis* (Mildbr. & Burret) C.C.Berg by Berg, Flora Zambesiaca 9(6).
- † Brenan (1954a) recognised the Mt. Mulanje plants as var. *africanum*. Ross, in Flora Zambesiaca 7(1), did not uphold the Mulanje population as being sufficiently different from the South African ones but, if opinion changed, *Vaccinium exul* var. *africanum* would be endemic to Mt. Mulanje.

<b>Southern Malawi</b>	
<i>Aloe buchananii</i> Baker	Aloaceae
<i>Aloe chabaudii</i> Schönland var. <i>mlanjeana</i> Christian	Aloaceae
<i>Sarcostemma mulanjense</i> Liede & Meve	Asclepiadaceae
<i>Helichrysum chrysophorum</i> S.Moore	Asteraceae
<i>Helichrysum dilucidum</i> S.Moore	Asteraceae
<i>Impatiens oreocallis</i> Launert	Balsaminaceae
<i>Begonia brevibracteata</i> Kupicha	Begoniaceae
<i>Buxus nyasica</i> Hutch.	Buxaceae
<i>Aeschynomene nodulosa</i> (Baker) Baker	Fabaceae
<i>Tephrosia aequilata</i> Baker ssp. <i>mlanjeana</i> Brummitt	Fabaceae
<i>Streptocarpus hirtinervis</i> C.B.Clarke	Gesneriaceae
<i>Urginea nyasae</i> Rendle	Hyacinthaceae
<i>Plectranthus dissectus</i> Brenan	Lamiaceae
<i>Plectranthus elegans</i> Britten	Lamiaceae



Table 2. Continuation

<i>Plectranthus zombensis</i> Baker	Lamiaceae
<i>Plectranthus</i> sp. nov. nr. <i>dissectus</i>	Lamiaceae
<i>Satureja verneyana</i> Brenan	Lamiaceae
<i>Ficus modesta</i> F.White *	Moraceae
<i>Cynorkis buchananii</i> Rolfe	Orchidaceae
<i>Holothrix johnstonii</i> Rolfe	Orchidaceae
<i>Polystachya lawrenceana</i> Kraenzl.	Orchidaceae
<i>Polystachya songaniensis</i> G.Will.	Orchidaceae
<i>Keetia foetida</i> (Hiern) Bridson	Rubiaceae
<b>Southern Malawi and adjacent Mozambique</b>	
<i>Aloe menyharthii</i> Baker ssp. <i>menyharthii</i>	Aloaceae
<i>Rhus acuminatissima</i> R. & A.Fern.	Anacardiaceae
<i>Diplolophium buchananii</i> (Benth. ex Oliv.) Norman ssp. <i>buchananii</i>	Apiaceae
<i>Helichrysum brassii</i> Brenan var. <i>brassii</i>	Asteraceae
<i>Lobelia blantyrensis</i> E.Wimmer	Campanulaceae
<i>Kalanchoe elizae</i> Berger	Crassulaceae
<i>Kotschya scaberrima</i> (Taub.) Wild	Fabaceae
<i>Exacum zombense</i> N.E.Br.	Gentianaceae
<i>Streptocarpus leptopus</i> Hilliard & B.L.Burt	Gesneriaceae
<i>Dissotis johnstoniana</i> Baker f. ssp. <i>johnstoniana</i>	Melastomataceae
<i>Polygala adamsonii</i> Exell	Polygalaceae
<i>Faurea racemosa</i> Farmar	Proteaceae
<i>Pavetta chapmanii</i> Bridson	Rubiaceae
<i>Pentas zanzibarica</i> (Klotzsch) Vatke ssp. <i>milangiana</i> (Verdc.) Verdc.	Rubiaceae
<i>Psychotria capensis</i> (Eckl.) Vatke ssp. <i>riparia</i> (K.Schum & K. Krause) Verdc. var. <i>riparia</i> .	Rubiaceae
<i>Synsepalum muelleri</i> (Kupicha) T.D.Penn.	Sapotaceae
<i>Gnidia chapmanii</i> B.Peterson	Thymelaeaceae
<i>Glyphaea tomentosa</i> Mast.	Tiliaceae
<i>Xyris makuensis</i> N.E.Br.	Xyridaceae
<i>Encephalartos gratus</i> Prain	Zamiaceae
<b>Southern Malawi and more distant locality</b>	
<i>Cyrtanthus welwitschii</i> Hiern ex Baker	Amaryllidaceae
<i>Peucedanum nyassicum</i> H.Wolff	Apiaceae
<i>Helichrysum membranaceum</i> Wild	Asteraceae
<i>Senecio auriculatissimus</i> Britten	Asteraceae
<i>Senecio milanjanus</i> S.Moore	Asteraceae
<i>Crassula schimperi</i> Fisch. & Mey. ssp. <i>transvaalensis</i> (Kuntze) R.Fern. var. <i>denticulata</i> (Brenan) R.Fern.	Crassulaceae
<i>Carex brassii</i> Brenan	Cyperaceae
<i>Coleochloa virgata</i> (K.Schum.) Nemes	Cyperaceae
<i>Diospyros abyssinica</i> (Hiern) F.White ssp. <i>attenuata</i> F.White	Ebenaceae
<i>Vaccinium exul</i> Bolus †	Ericaceae
<i>Clusia swynnertonii</i> S.Moore	Euphorbiaceae
<i>Crotalaria gazensis</i> Baker f. ssp. <i>gazensis</i>	Fabaceae
<i>Indigofera lyallii</i> Baker ssp. <i>nyassica</i> J.B.Gillett	Fabaceae
<i>Vigna gazensis</i> Baker f.	Fabaceae
<i>Scilla lazulina</i> Wild	Hyacinthaceae
<i>Dierama formosum</i> Hilliard	Iridaceae



Table 2. Continuation

<i>Englerina kwaiensis</i> (Engl.) Polhill & Wiens	Loranthaceae
<i>Hibiscus burtt-davyi</i> Dunkley	Malvaceae
<i>Corrigiola drymarioides</i> Baker f.	Molluginaceae
<i>Aerangis distincta</i> J.L.Steward & la Croix	Orchidaceae
<i>Eulophia monticola</i> Rolfe	Orchidaceae
<i>Satyrium shireense</i> Rolfe	Orchidaceae
<i>Stolzia compacta</i> P.J.Cribb ssp. <i>purpurata</i> P.J.Cribb	Orchidaceae
<i>Stolzia repens</i> (Rolfe) Summerh. var. <i>obtusa</i> G.Will.	Orchidaceae
<i>Panicum eickii</i> Mez.	Poaceae
<i>Rytidosperma davyi</i> (C.E.Hubb.) Cope	Poaceae
<i>Coffea mufindiensis</i> Hutch. ex Bridson ssp. <i>australis</i> Bridson	Rubiaceae
<i>Pavetta klotzschiana</i> K.Schum.	Rubiaceae
<i>Thesium whyteanum</i> Rendle	Santalaceae

### Introduced plants (tab. 3)

Permanent habitation has almost certainly never occurred on Mulanje and Mchese and not in living memory (Chapman 1962). Short-term occupation, in the hot weather, of holiday cottages built on Lichenya Plateau (all now derelict) by Scottish Mission staff, European tea planters, the District Administration and others, as well as temporary encampments of Forestry Department staff, have contributed to the introduction of alien species to the mountain's flora. Forestry projects since the 1920s introduced alien gymnosperms. *Cupressus lusitanica* Mill. was planted first, in the 1920s, followed 20 years later by *Pinus patula* Schiede ex Schltdl. & Cham. and *Cunninghamia lanceolata* (Lamb.) Hook. and, later, by trials of *Pinus elliottii* Engelm. and *P. pseudostrobus* Lindl. Early in the 1980s, the encroachment of the Forest Reserve, by cultivators on the eastern slopes of the mountain at Mulosa, was planted with *Pinus kesiya* Royle ex Gordon and *Eucalyptus* sp. *Gmelina arborea* Roxb. (Verbenaceae) was planted in the 1960s to mark the boundary between the Forest Reserve and Esperanza Estate and, despite being well established and producing large quantities of seed by 1986, there were no signs of regeneration (Chapman pers. comm.). In recent times, the encroachment of subsistence farming into the Forest Reserve has also introduced crop and weed species to the cleared areas, e.g. *Psidium guajava* L., bananas, pineapples, *Ageratum conyzoides* L. and *Galinsoga parviflora* Cav.

Some species have become naturalised and are included in the main checklist, e.g. *Digitalis purpurea* L. scattered by Mrs. Greneger, whilst others have remained as discreet entities, e.g. *Quercus robur* L., *Camellia sinensis* (L.) Kuntz and, on the lower slopes, *Cunninghamia lanceolata*, *Pinus pseudostrobus* and *P. kesiya* (Chapman pers. comm.). Two introduced species have become invasive, smothering the natural vegetation, i.e. *Pinus patula*, planted in trial plots on Sombani and Chambe from 1946 by the Forestry Department (Chapman 1995), and *Rubus ellipticus* J.E. Sm., planted in Zomba Botanic Garden between 1898 and 1900 (Edwards 1982) and first collected on Mt. Mulanje at a woodman's camp in 1929 by Burtt Davy (*Burtt Davy* 22060 [FHO] Brenan 1954a).



**Table 3. Species introduced to the Mt. Mulanje massif.**  
(in alphabetical order of family).

■ = Reported in Edwards (1982); ▲ = Reported in Chapman (1995); † = Reported in Chapman (1994a); † = Reported in White et al. (2001); ● = Reported in Wild (1967); ■ = Personal observation by A.M.Strugnell.

Species	Family	Locality	Selected specimens	Notes
<i>Mangifera indica</i> L.	Anacardiaceae	Mountain foot		■ Native of Indomalaysia.
<i>Aristolochia elegans</i> Mast.	Aristolochiaceae	<i>Eucalyptus</i> plantation	Chapman & Chapman 9106 (FHO)	Native of South America, now naturalized.
<i>Ageratum conyzoides</i> L.	Asteraceae	Widespread	Chapman 573; Blackmore et al. 1520 (K)	Native of Australia, now a pantropical weed.
<i>Galinsoga parviflora</i> Cav.	Asteraceae	Secondary forest growth ; cultivated land.	Newman & Whitmore 185 (BM; SRGH)	● Native to South America.
<i>Tithonia diversifolia</i> (Hemsl.) A.Gray	Asteraceae	Weed of roadsides and waste places	Cronin in GHS 136,400 (SRGH)	● Native of Central America.
<i>Fernandoa abbreviata</i> Bidgood	Bignoniaceae	Mulanje Boma	Chapman & Chapman 8001 (FHO, K)	Although native to Tanzania and Malawi, it is planted as an ornamental at the foot of Mt. Mulanje.
<i>Bombax rhodognaphalon</i> K.Schum. var. <i>rhodognaphalon</i>	Bombacaceae	Tinyade (Likulezi); Chief Mabuka's Court	Chapman & Chapman 6474, 8639 (FHO)	Planted as an ornamental at the foot of Mt. Mulanje but the species does occur in lowland forest in S. Malawi, Kenya and Tanzania.
<i>Lonicera</i> sp.	Caprifoliaceae		Chapman 8505 (FHO)	Introduced to the C.C.A.P. cottage in the 1930s. Has not spread (Chapman pers. comm.). Native of the northern hemisphere.
<i>Ipomoea hederifolia</i> L.	Convolvulaceae	Likabula	Blackmore et al. 1470 (BM)	Weed of cultivation. Naturalised in East and South Tropical Africa. Native of tropical America.
<i>Cupressus lusitanica</i> Mill.	Cupressaceae	Lichenya Plateau		Trial plots were established at Sombani and Chambe. It is not invasive (Chapman pers. comm.). Native of Central America.
<i>Cassia fistula</i> L.	Fabaceae: Caesalpinioideae	Esperanza	Chapman & Chapman 6866	Cultivated as an ornamental tree. Native of Asia.



Table 3. Continuation

Species	Family	Locality	Selected specimens	Notes
<i>Quercus robur</i> L.	Fagaceae		<i>Chapman &amp; Chapman</i> 8179 (FHO)	Planted beside Westrop's 'Araloon', later University, cottage (now destroyed). Native of Europe.
<i>Persea americana</i> Mill.	Lauraceae	Riparian forest, Esperanza; Chisongeli encroachments	<i>Dowsett-Lemaire</i> ecol. 168 (BR)	◇ Locally naturalized. Native of tropical America.
<i>Toona ciliata</i> M. Roem.	Meliaceae	Esperanza; Mimosa Segregation Plots		◇ Common. Large trees are pitsawn and valued for their timber. Native of Indomalaysia and Australia.
<i>Eucalyptus</i> sp.	Myrtaceae	Lower slopes, especially Chisongeli		■ † Replanting programme. Native of Australia.
<i>Psidium guajava</i> L.	Myrtaceae	Lower slopes between 600-900 m.	<i>Dowsett-Lemaire</i> ecol. 160 (BR)	◇ ■ Naturalized. Native of tropical America.
<i>Ligustrum</i> sp.	Oleaceae	Likabula	<i>Chapman &amp; Chapman</i> 7130 (FHO)	Native of Europe, Asia and Australia.
<i>Passiflora edulis</i> Sims	Passifloraceae	Lichenya; Thuchila		■ Native of Brazil.
<i>Pinus patula</i> Schiede ex Schltdl. & Cham.	Pinaceae	All plateau areas apart from Madzeka; not on Mchese Mt.		■ ▲ Originally planted at Chambe in the 1940s and subsequently on a wider scale from the mid 1950s, now virtually naturalized. Native of Mexico.
<i>Bambusa vulgaris</i> Schrad. ex Wendl.	Poaceae	Esperanza		◇ A widely grown cultigen. Originally planted as an ornamental. Abundant in secondary transition woodland.
<i>Prunus</i> sp. (possibly <i>persica</i> )	Rosaceae	Near Lichenya Forestry Hut	<i>Chapman</i> 5860 (FHO)	■ Native of temperate regions ( <i>P. persica</i> , China).
<i>Rubus ellipticus</i> J.E.Sm.	Rosaceae	Originally confined to the forest edges, now widespread	<i>Chapman</i> 5862 (FHO)	■ ◇ Native of India and Sri Lanka, now naturalized on Likabula, Lichenya and Chambe.
<i>Rubus</i> sp.	Rosaceae	Lichenya Plateau, site of old Boma Hut	<i>Chapman &amp; Chapman</i> 8238 (FHO)	



Table 3. Continuation

Species	Family	Locality	Selected specimens	Notes
<i>Digitalis purpurea</i> L.	Scrophulariaceae	Lichenya Plateau	<i>Chapman</i> 6049	Naturalized. Native of Europe and the Mediterranean area. Extensive fires on the Lichenya plateau between 1998 and 2002 seem to have resulted in the disappearance of the foxgloves (J. Killick pers. comm.)
<i>Physalis peruviana</i> L.	Solanaceae	Sombani, Chinzama		■ Native of tropical South America.
<i>Solanum seaforthianum</i> Andr.	Solanaceae	Likabula Valley; Likabula Estate (at the Linji stream)	<i>Chapman &amp; Chapman</i> 7018, 8541, 9481 (FHO)	Naturalized. Native of Central America and the West Indies.
<i>Cunninghamia lanceolata</i> (Lamb.) Hook.	Taxodiaceae	Likabula Valley	<i>Chapman &amp; Chapman</i> 8725 (FHO)	Remaining trees of a 1950s trial plot (Chapman pers. comm.) Native to China.
<i>Camellia sinensis</i> (L.) Kuntze	Theaceae	Lichenya Plateau (site of Ma Brown's cottage)		■ This has not spread from its original location (Chapman pers. comm.). Native to China.
<i>Lantana camara</i> L.	Verbenaceae	Likabula, low down in the Malilima valley below Chisongeli Peak (Chapman pers. comm.).		■ Native of tropical America.
<i>Lantana trifolia</i> L.	Verbenaceae	Likabula Valley	<i>Chapman &amp; Chapman</i> 9052 (FHO)	Introduced from the Americas.

### Human factors affecting the vegetation on the Mt. Mulanje massif

Population growth and increased mobility are the main factors, directly or indirectly, responsible for loss or damage to ecosystems (Beentje *et al.* 1994). Brass (1953) stated that, in 1946, Malawi was still a country with large forested areas, albeit mainly in the north. He acknowledged that large areas of land had already been changed by human activities and that processes destructive to the natural vegetation were accelerating due to population increase. It is now no longer the case that delineating a particular area for protection is all that is necessary to conserve the biodiversity because protected areas are now under increasing pressure as sites to be exploited (Dudley 1999).

**(a) Population.** In Malawi, the population has increased dramatically in the last 50 years, from about 2 million in 1946 to over 10 million in 1994 (White *et al.* 2001). In southern Malawi in 1897, the population density around Mt. Mulanje (Phalombe and Mulanje Districts) was approximately 20 people/km<sup>2</sup>, the highest density within the country at that time (Dudley 1999). By 2001, it had reached 185 people/km<sup>2</sup>, the average land holding being 0.4 hectares per farm family (Sambo 2001; Warren 2001). Mt. Mulanje lies in the Southern Region of Malawi, which contains a disproportionately high percentage (66%) of the poorer households in Malawi. It is a maize-deficit area and poverty is an



important factor in the use of resources (Sambo 2001). Villagers on the north-eastern slopes of Mt. Mulanje generally have more land available for cultivation but there is high unemployment. People here, therefore, rely on the Forest Reserve to supplement their income and provide basic needs. Conversely, villagers on the southern slopes have low paid, seasonal employment on the tea estates but lack sufficient land to grow enough food for their needs, having nowhere to expand other than into the Forest Reserve. The *Eucalyptus* and *Pinus* plantations on the border of the Forest Reserve, planted in 1986 to reclaim land that had been cultivated, have reduced the availability of many of the non-timber forest products (Warren 2001). The rural people have always relied on the mountain for much of their livelihood, i.e. water, fuel-wood, timber for building and charcoal-making, hunting, medicines and food, such as fruits, edible fungi and honey. A new road between Blantyre and Mt. Mulanje will soon bring the mountain's resources (especially wood, the demand for which is now beginning to outstrip supply in the region) within the reach of a much greater number of people (Dudley 1999).

**(b) Logging and tree products.** The importance of the Mt. Mulanje Cedar (*Widdringtonia whytei*), due to its timber qualities and commercial value, has been recognised from the earliest days of the Protectorate Government in the 1890s. The wood is aromatic, light to moderately heavy, impervious to termites and wood-borers and strongly resistant to fungal attack. It is easily worked and is used for house building, boats, panelling, furniture making and more wasteful use, such as scaffolding planks. Due to over-exploitation (legal and illegal) and recent official emphasis on revenue rather than sustainable production, cedar now has a high scarcity value (Chapman 1995) and is listed as an endangered species (Farjon & Page 1999). Sakai (1989) found that cedar forest, at all stages of development, totalled no more than 15 km<sup>2</sup> on Mt. Mulanje (excluding Mchese Mt.). The cumulative effects of fire, drought and aphid attack have also contributed to the serious decline of cedar (Sambo 2001).

*Prunus africana* (Hook.f.) Kalkm. grows from 560-1250 m on Mt. Mulanje and to 1400 m on Mchese Mt. It is listed in the CITES Appendix II as an endangered species in Africa due to the harvesting of its bark for medicinal use. It could be vulnerable on Mt. Mulanje because it grows at relatively low altitudes. However, it should be possible to propagate and grow it in plantations, so protecting the wild populations.

Extensive tea plantations and the planting of coffee, rubber and tobacco at the southern foot of Mt. Mulanje have resulted in the disappearance of vast tracts of forest and woodland. Although the tea estates were generally careful to preserve the riverbank trees, regulations protecting riverbanks were often flouted elsewhere (White *et al.* 2001). Timber trees at lower altitudes, such as *Khaya anthotheca* (Welw.) C.DC., *Breonadia salicina* (Vahl) Hepper & J.R.I. Wood and *Newtonia buchananii* (Baker) G.Gilbert & Boutique have been extensively felled (White *et al.* 2001). In recent years, much of the species-rich Chisongeli forest, below about 1600 m, has been felled for fuel wood and for shifting cultivation. A replanting programme funded by the World Bank in 1986 used exotic species of *Pinus* and *Eucalyptus* but resulted in more forest being cut down to replace the cultivated plots.

**(c) Fires.** Fires, both natural and due to human practices, have always been a feature on Mt. Mulanje (Chapman & White 1970). Alexander Whyte described fires, originating from the villages surrounding the mountain, creeping up the precipitous cliffs by spreading from tuft to tuft of the sedge, *Coleochloa setifera* (Ridley) Gilly. Once on the plateau the fires spread rapidly, in exceptionally dry seasons penetrating the damp forests causing great damage to the trees (Britten *et al.* 1894). Goldammer & Manan (1996: 4) state 'Wildfires in tropical rainforest lead to high mortality because the generally thin-barked rainforest species are very susceptible to high fire temperatures'. An extensive system of fire traces and controlled burning policy on Mt. Mulanje by the Forest Department helped to lower the detrimental effect of fire, although these policies have somewhat collapsed in recent years. Warren (2001), in a study of the relationship between the uses and attitudes towards fire by the local communities and the destructive fires (wildfires) in the Forest Reserve, believes that there is at present insufficient data on the underlying causes and consequences of fire, which is contrary to the general assumption that many fires are deliberately started by hunters and honey-gatherers. She found that



local communities have a balanced and well-developed perception of the effects of fire, especially if directly relevant to their income-generating activities, but feel little responsibility for such events in the Forest Reserve, land from which they are politically excluded. High population density and poverty tend to result in the short-term benefits of the use of fire overriding the long-term consequences. As Sarre & Goldammer (1996: 1) state 'Fire...is just part of the even more complex societal and environmental matrix that has led to the high rates of deforestation and degradation....'

Increased research and record keeping in order to understand the effects of fires on the mountain's flora and fauna would be useful (Bone 1995; Dudley 1999; Warren 2001). Lemon (1968) concluded that fires were not detrimental to the grassland communities of the Nyika Plateau in northern Malawi. Whether or not this is also true for the Mulanje plateaux grasslands is not known but J. Killick (pers. comm. 2002) has observed that, since 1998, there have been extensive fires on the Lichenya Plateau which seem to have caused the disappearance of the naturalised *Digitalis purpurea* but greatly increased populations of the *Satyrium* orchid. Lock (1998) suggests that studies of species in relation to fire – seed dispersal, seed germination and the interactions with fire as adult plants – are best done by those that can examine the plants regularly, i.e. residents of Malawi. Dudley (1999) states that uncontrolled, late [dry] season fires have a more devastating effect and considers that fire-management programmes for Mt. Mulanje need to be thoroughly analysed and rethought. Warren (2001) warns that poorly considered fire-management programmes could have the reverse effect in controlling fire damage if the requirements and frustrations of the local community are not taken into account.

**(d) Invasive species.** Fire contributes to the spread of one of the two seriously invasive species on Mt. Mulanje. Bone (1995) describes how the cones of *Pinus patula* (Mexican Pine) readily open with heat, thus releasing the wind-dispersed seeds at a time when competitors are scarce and nutrients abundant. Pine species are among the most aggressive, exotic tree invaders and easily colonise fire-disturbed sites, especially in tropical mountainous regions, due to their ability to cope with water stress and competitor species (Goldammer & Manan 1996). Mexican Pine out-competes regenerating Mulanje Cedar on the edges of cedar stands (Edwards 1982). Edwards (1982), Sakai (1989), Verboom (1992) and Chapman (1995) all voiced concern about the spread of *P. patula* on Mt. Mulanje. Later studies (Bone 1995) examined the effects of pine invasion on forest and grassland sites. She showed that invasion of both habitats, by *Pinus patula*, was accompanied by changes in species composition, including possible elimination of endemic species. She also found that invasion of cedar forest is enhanced by disturbance due to cedar felling. As fire is an integral part of the ecology of Mt. Mulanje, further studies on the relationship between fire and the spread of *P. patula* are required in order to formulate suitable management policies.

*Rubus ellipticus* (Himalayan raspberry) has also become a serious weed of natural vegetation (Chapman 1994a) and is a successful invader of forest edges and fire-protected grassland, eventually forming impenetrable thickets (Edwards 1982). Sharp prickles, root suckers and vigorous re-growth after burning or cutting make it a difficult plant to control.

Eradication of both these species will be a difficult, if not impossible, task given the present resources and lapse of control measures. Their presence may have to be tolerated if their density can be kept to a lower level.

### History of plant collecting

The history of plant collecting on the Mulanje massif is surveyed in chronological order in table 4. The table includes information on localities, seasons during the collection trips, and specimen deposition.



**Table 4. History of plant collecting on the Mulanje massif.**  
(see fig. 1 for localities).

Date	Collector	With:	Localities visited	Season	Specimens at:	Notes and references
October 1894	A. Whyte		Lichenya	Dry & hot	K; PRE	Britten et al. 1894
1891-1896	J. Buchanan				A; B; BM; BR; E; F; FHO; GH; K; MO; NH; PRE; SAM	
November-December 1896	J. McClounie				B; FHO; K	Burkill 1898
1897	G. Adamson		No localities given		BM; BR; E; K; P	
1898	J.M. Purves		Thuchila		FHO; K; PRE	
July 1929	Imperial Forestry Institute Expedition	J. Burt Davy		Dry & cool	BM; BR; FHO	Burt Davy & Hoyle 1936
October 1929	J.B. Clements		Likabula	Dry	FHO; K	
1931-1937	P. Topham				BM; FHO; K	
March 1937	G. Lawrence		Likabula	Rainy	K	
October 1941	P.J. Greenway		Thuchila	Dry & hot	EA; K	Unpublished collection
1942	A.P.S. Forbes		Thuchila		EA	Unpublished collection
June-July 1946	A.S. Vernay Nyasaland Expedition	L.J. Brass	Lichenya	Dry & cool	BM; BR; FHO; K; MO; NY; SRGH	Brass 1953, Brenan 1953, 1954 a & b.
1947	F.L.H. Lupton				BM	
1949	P.O. Wiehe		Chambe, lower slopes and surrounds		K; SRGH	Poaceae
1949	H. Faulkner		Swazi Estate		K	
May 1956	L.C. Leach		Lower slopes, near Likabula.		K	
July-August 1956	Cambridge University Expedition	E. I. Newman & T.C. Whitmore	Thuchila; Sombani; Little Ruvo Valley; Chisongeli forest	Dry & cool	BM; BR; Forestry Dept., Zomba (woody plants only); NY; SRGH; WAG	Hugh-Jones et al. 1957
1956 & 1958	G. Jackson		Thuchila; Chambe; Sombani; Ruvo Basin	Dry Rainy	BM; FHO; K; SRGH	
May 1957	R. Goodier		Chambe	Dry	K; ?SRGH	
1957-1958	J.D. Chapman		Mt. Mulanje	All year	BR; FHO (woody) SRGH (herbs & ferns) BM (ferns)	Chapman 1962
March 1960	J.B. Phipps		Lichenya	Rainy	BM; EA; K; PRE; SRGH	Poaceae



Table 4. Continuation

Date	Collector	With:	Localities visited	Season	Specimens at:	Notes and references
June 1962	H.M. Richards		Chambe; Lichenya; Sombani & Ruo Basins; Cilemba Peak; Great Ruo Gorge	Dry	K	
June 1962	E.A. Robinson		Likabula; Lichenya; Chambe; Ruo Gorge	Dry	K	
March-May 1963	H. Wild	D. Cornelius	Thuchila; Lichenya; Sapitwa; Sombani; Ruo Gorge	Rainy to begin- ning of dry	BM; BOL; EA; K; LISC; PRE; SRGH	List of 30 endemic species, Wild 1964
Nov. 1964 May 1965 February-April 1980	B. Morris		Widespread, including the Limbuli stream in Chisongeli forest		K; SRGH; MAL	Orchidaceae, Morris 1970
January- February 1967	O.M. Hilliard & B.L. Burt		Likabula; Chambe; Thuchila; Lichenya; Sombani & Ruo Basins	Rainy	E; K	
July 1969	C. Howard- Williams		Lujeri	Dry	K	
April-July 1970	R.K. Brummitt	E.A. Banda	Ruo Gorge; Ruo & Sombani Basins; Madzeka; Thuchila; foot of Mchese Mt. (Fort Lister Gap)	Dry	K; MAL	
June 1970	M. Iwarsson & O. Ryding		Sombani, Mchese Mt.	Dry	K; UPS	
September 1970	T. Müller		Lower slopes; Ruo Gorge; The Crater; Lichenya Forest Reserve	Dry	K; SRGH	
September 1970	J. Pawek		Lichenya	Dry	K	
January- February 1971	O.M. Hilliard & B.L. Burt		Sombani & Madzeka Basins; Thuchila; Chambe	Rainy	K	Streptocarpus in particular.
1969; 1971 1974	A. Moriarty		Lichenya Plateau	Dry	K	Moriarty 1975



Table 4. Continuation

Date	Collector	With:	Localities visited	Season	Specimens at:	Notes and references
May 1971	A.J. Salubeni		Chambe; Likabula	Dry	K; MAL	
November 1972	L.C. Leach		Likabula; Chambe; Lichenya	Rainy	K	
April 1974	D.J. Allen		Little Ruo Gorge; Madzeka Plateau		K	
June 1978	M. Iwarsson & O. Ryding		Sombani; Mchese Mt.		K; UPS	
March 1979	S. Blackmore	R.K. Brummitt & E.A.K. Banda	Chambe; Lichenya; Sapitwa	Rainy	K	
May 1980	R.K. Brummitt	S. Blackmore	Likabula	Early dry	K; MAL	
February 1981	J.D. Chapman	E.J. Tawakali	Lichenya		FHO; K; MAL	
May 1981	F. White	I.H. Patel, J.D. and E.G. Chapman	Likabula; Lichenya; Chambe; Thuchila; Chinzama; Sombani; Madzeka; Little Ruo Gorge	Early dry	BR	White et al. 2001
November 1981	L. Van der Linden		Lichenya		BR	
1981	J.D.Chapman		Little Ruo (May); Lichenya (August & December); Thuchila (October)	Dry & hot	FHO; BR; K; MAL	
February 1982	J.D. Chapman	I.H. Patel	Lichenya; Namisili	Rainy	FHO; K; MAL	
February 1982	R.K. Brummitt	R.M. Polhill, I.H. Patel & F. N. Hepper			K	
1981; 1982; 1983 (several visits)	I.F. la Croix	M. Spurrier  P. Jenkins, A. & J. Killick	Mimosa; Likabula Valley; Lichenya Plateau; Ruo Gorge;		K; MAL ?	Orchidaceae, Flora Zambesiaca. Vol. 11, la Croix 1991
November 1983 & 1985	N. G.B. Johnston- Stewart	I.F. la Croix	Sombani; Chinzama; Ruo Gorge	Start of rains	K; FHO; MAL?	
May 1984	G.M. Christenson	I.H. Patel	Likabula	Dry	K	
April-May 1984	F. White	F. Dowsett- Lemaire	Esperanza; Glenorchy; Great Ruo Gorge; The Crater; Machemba Hill	Early dry	BR	Dowsett- Lemaire & White 1990



Table 4. Continuation

Date	Collector	With:	Localities visited	Season	Specimens at:	Notes and references
1984; 1987 and many other occasions	P. Royle	I.F. la Croix	Lichenya; Madzeka	Rainy -early dry	K	Orchidaceae
1985; 1987; 1988; 1989; 1991	P. Jenkins		Likulezi ; Likabula ; Lichenya Plateau; Ruo Gorge; Chambe		K	
July 1986	S. Hardy	A. Maclachlan	Chambe; Thuchila		K	
July 1986	E.A.K. Banda	K. Kaunda	Nansinga and Lunguni Streams		K; MAL	
1985-1989	J.D. Chapman	E.G. Chapman	Everywhere, including Mchese	All year	E; FHO; K; MAL; MO	White et al. 2001; Checklist
March 1987	F. White	J.D. Chapman	Lower slopes and surrounds	Rainy	BR	
May 1989	G.V. Pope	A.Radcliffe-Smith, D.J. Goyder	Likabula; Lichenya; Chambe	Early dry	K	Flora Zambesiaca accounts
April 1991	Hamilton & H.P. Linder		Sombani	Rainy		
1991	S.M. Philips				K	Poaceae
December 1991	A. Verboom	C.A. Pauw, P. Hooks		Rainy	BOL; K; MAL; MO; NSW; PRE; S; SRGH; WAG; Z	
February 1992	D.J. Goyder & A.J. Paton		Sombani ; Mchese	Rainy	K; MAL	
July-September 1997	University of Newcastle-upon-Tyne Expedition. N.K. Beharrell	J. Hudson, C. Magwira, L. Musava, H. Patel, D. Pemba, H. Phiri, H. White	Thuchila; Chinzama; Madzeka	Dry		
August-September 1998	A.M. Strugnell	A.J. Salubeni, C.P. Maliwichi, E. Katumba, A. Kalonga-Banda	Likabula; Lichenya; The Crater; Great Ruo Gorge; Chinzama; Chisongeli; Sombani & Ruo Basins	Dry	Mainly FHO & MAL A few at E, K and MO	



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## Part 2

# The Checklist

### Explanatory points

In order to be more useful than a straight list of species, a small amount of information is provided under each species name. Much of this information has been gleaned from the herbarium specimens consulted, especially under the headings of habitat, flowering and fruiting times, altitudes, occurrence and localities. The brief description of the plant is a combination of information from the specimens and from the literature. In many cases, altitudinal information is incomplete because of few records and cannot be assumed to be a full representation of range. The distributions were taken from published sources, mainly flora accounts but also books and research papers on specific families. However, the distribution data might not be totally inclusive if no recent information was available. Up-to-date names of places and areas have been used, with the exception of 'The Transvaal' in South Africa because no new name was comparable to the same area. A comment was included if there was something of particular interest to report on a species. Not all categories of information are available for every species listed.

It was considered important to cite at least one collection for each species listed and where that herbarium specimen could be located for future checking. Often there were collections from several different areas on the massif, in which case a specimen was cited for each locality (see fig. 1 for localities). In two or three instances, a specimen was not available but a photograph was and that was used as the record of the species, e.g. *Phoenix reclinata* (Arecaceae). Species were only recorded in the checklist if a specimen or a photograph had been located as evidence of its presence on the massif. The majority of the collections can be found at FHO, K, MAL & MO, others being at BM, BR, E, EA, PRE & UPS. SRGH holds some herbaceous Chapman material from the 1950s and also has some of the other earlier collections from Mt. Mulanje.

Synonyms are provided under the current species name only in those cases where there has been a relatively recent name change. A full synonymy can be found in Flora Zambesiaca and the Flora of Tropical East Africa.

The families are arranged in alphabetical order and follow the Flora Zambesiaca approach with modifications according to Brummitt (1992) and Bremer *et al.* (1998). Within the family, the genera are arranged alphabetically, as are the species within a genus. Species names follow those published in Flora Zambesiaca or the latest published change. Where there is taxonomic disagreement, a note has been inserted to highlight the situation. The authors of plant names follow the standard list produced by Brummitt and Powell (1992).

Published volumes of Flora Zambesiaca provide more detailed descriptions, illustrations and keys and it would be useful to use these alongside the checklist. The Flora of Tropical East Africa, the Flora of Southern Africa, Kew Bulletin and Kirkia are also useful reference sources for detail. References relating to species information are provided under each family in the checklist.

### Excluded species

Four species would have been added to the checklist if a collection or photograph had been available to cite as evidence of their presence on Mt. Mulanje. Two are reported sightings made by people familiar with the massif and its flora: One plant of *Eucomis* sp. nr. *autumnalis* (Mill.) Chitt. ssp. *autumnalis* (Hyacinthaceae) was seen by J.D. Chapman in April 1989 growing at c. 1300 m. near the source of the Mwalilima Stream, S.W. corner of Mulanje below Manene Peak (J.D. Chapman, pers. comm. 2004) and *Aloe myriacantha* (Haw.) Schult. (Aloaceae) has been reported growing on the upper slopes of Manene Peak and flowering between January and March (Rev. S. Lane, pers. comm. 1999). Thirdly,



a *Drosera* seen on the Boma Path at 1350 m seems to be *D. burkeana* Planch. (Droseraceae) (Julian Bayliss, MMCT, pers. comm. July 2004). The fourth is a proposed new species of *Plectranthus* (Lamiaceae) from the western fringe of the Lichenya Plateau (*P. mulanjensis* Thiede ined.) (J. Thiede, pers. comm. 2003).

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## ACANTHACEAE

Refs. Champluvier, 2002; Kelbessa, 1991; Sidwell, 1998; Vollesen, 1990.

### *Acanthopale pubescens* C.B.Clarke

Soft-wooded, erect shrub, up to 3 m high. Small axillary and terminal racemes, one flower at a time opens. Flowers white, streaked with purple.

**Flowering:** February-April. **Habitat:** Forest understorey. **Altitude:** 1250-1850 m. **Occurrence:** Locally common, gregarious. **Distribution:** Eastern Africa from Ethiopia to Zimbabwe, including E. D. R. Congo. **Comments:** Not all plants in the group were flowering at the time of collection (only two in the case of JDC 8347).

**Localities:** Little Lichenya River, above the water intake for Mini-Mini, *Chapman JD & Chapman EG 8347* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9066* (FHO). Ruo Gorge, *Steiner 633* (K). Lichenya Plateau, Boma Cottage, *Wild H 6165* (BR, K).

### *Asystasia gangetica* (L.) T.Anderson

ssp. *micrantha* (Nees) Kelbessa

Herbaceous climber, rooting at the nodes. Flowers white with purple markings on the lower lip, corolla less than 25 mm in length.

**Flowering:** May-June. **Habitat:** Forest, in thick vegetation in grassy clearings. **Altitude:** c. 1350 m. **Distribution:** Widespread in tropical Africa and South Africa. **Comments:** ssp. *gangetica* occurs in tropical Asia.

**Localities:** Lichenya path, between the Likabula and Sakwe Rivers, *Goyder DJ et al. 3188* (K). Great Ruo Gorge, *Richards HM 16795* (K).

### *Barleria spinulosa* Klotzsch

Herb or untidy, much-branched, small shrub, up to 1.5 m high. Flowers mauve, with long corolla tube. Sepals spiny with maroon veining, up to c. 1.5 cm long × 1 cm wide.

**Flowering:** April-May. **Habitat:** *Brachystegia* woodland, unburnt for some time, often beside a river. **Altitude:** 800-1800 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Phalombe area at the base of the mountain, *Chapman JD 588* (K). Likabula Valley near C.C.A.P. Likabula House, *Chapman JD & Chapman EG 7437* (FHO, K). Chambe Plateau, *Salubeni AJ 1631* (K).

### *Brachystephanus africanus* S.Moore

Herb or shrub, up to 1 m or more high. Flowers purple with a narrow tube. Bracts pink.

**Flowering:** July. **Habitat:** Forest understorey. **Altitude:** 1500-1900 m. **Occurrence:** Occasional. **Distribution:** E. D.R. Congo, Rwanda, Burundi, Uganda, Tanzania and Malawi.

**Localities:** Lichenya Plateau, *Brass LJ 16809* (K). Ruo Gorge, *Wild H 6245* (K).

### *Brillantaisia kirungae* Lindau

Syn. *Brillantaisia ulugurica* Lindau

Robust, soft-wooded shrub or small tree, up to

7 m high. Large, coarsely dentate leaves. Inflorescence terminal, flowers purple.

**Flowering:** August-September. **Fruiting:** September.

**Habitat:** Lightly shaded, forest understorey or forest edge.

**Altitude:** 1300-1550 m. **Occurrence:** Locally abundant.

**Distribution:** Sudan, E. D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, N.E. Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Above the Mulosa Drift Plantation, *Chapman JD & Chapman EG 8862* (FHO). Above Chisambo, along the Muluzi Stream, *Chapman JD & Chapman EG 9271* (FHO).

### *Crossandra puberula* Klotzsch

Herb, up to 40 cm high or more. Flowers orange.

**Flowering:** March. **Habitat:** Riparian forest. **Altitude:** c. 800 m. **Distribution:** Uganda, Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Near Likabula forestry depot, *Chapman JD & Chapman EG 7322* (FHO).

### *Dicliptera heterostegia* Nees

Herb or shrub, up to 2 m high. Small, pinkish-purple flowers appear sporadically from clusters of large, leafy bracts.

**Flowering:** July-October. **Habitat:** Evergreen forest. **Altitude:** 1050-1350 m. **Occurrence:** Locally abundant. **Distribution:** Malawi, Mozambique and E. South Africa.

**Localities:** Little Ruo Path, *Brummitt RK 12343* (K). Above Chisambo, *Chapman JD & Chapman EG 9268* (FHO). Chisongeli Forest, *Dowsett-Lemaire F 951* (K). Ruo Gorge, *Müller T 1499* (K).

### *Dicliptera leonotis* C.B.Clarke

Herb or shrub, up to 1.8 m high. Flowers purple with white and darker markings.

**Flowering:** April-May. **Habitat:** *Brachystegia* woodland or long grass. **Altitude:** c. 1100 m. **Distribution:** Malawi and Mozambique.

**Localities:** Fort Lister Gap, foot of Mchese Mt, *Brummitt RK & Banda EA 9895* (K). Phalombe Gorge, *Chapman JD 630* (K).

### *Dicliptera lingulata* C.B.Clarke

Herb or weak-stemmed shrub, up to 1 m high. Flowers purple or pink with purple stippling.

**Flowering:** May-July. **Habitat:** Understorey of riparian forest, especially along the paths. **Altitude:** 1000-1450 m. **Occurrence:** Common. **Distribution:** Malawi.

**Localities:** Chambe Shelf, *Chapman JD 7614* (K). Phalombe River, *Chapman JD 7834* (K). Likulezi River Gorge, *Chapman JD & Chapman EG 7687* (FHO). Likabula Valley, along the Lichenya path, *Chapman JD & Chapman EG 8531* (FHO). Mchese Mt., Nampende Stream, *Chapman JD & Chapman EG 9229* (FHO).

### *Dyschoriste albiflora* Lindau

Small, densely-branched shrub, up to 2 m high. Young branchlets square. Leaves opposite and



decussate. Flowers white with purple markings on the lip.

**Flowering:** February-March. **Habitat:** Forest edge or semi-closed, riparian woodland. **Altitude:** 800-1150 m. **Distribution:** Tanzania, Zambia, Malawi and Mozambique. **Localities:** Satwi Stream on the Lichenya path, Likabula Valley, *Chapman JD & Chapman EG 7185* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9501* (FHO).

*Dyschoriste verticillaris* (Oliv.) C.B. Clarke

Herb with woody rootstock or small shrub, up to 1 m high. Flowers mauve with purple marks and orange-yellow at the throat.

**Flowering:** June-August. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1300 m. **Occurrence:** Locally common. **Distribution:** S. Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Below Chikomwe Hill, Likulezi, *Chapman JD & Chapman EG 7724* (FHO). Above Fort Lister Forestry Office, *Chapman JD & Chapman EG 8757* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9169* (FHO).

*Hypoestes aristata* (Vahl) Roem. & Schult.

Shrubby herb, up to 1.5 m high. Flowers pale purple with purple stippling on the central part of the lip.

**Flowering:** May. **Habitat:** Forest edge. **Altitude:** 900-1550 m. **Distribution:** From Cameroon east to Ethiopia, and south to Cape Province in South Africa.

**Localities:** Chambe West Face Shelf approach, *Chapman JD & Chapman EG 7667* (FHO). Great Ruo Gorge, *Richards HM 16741* (K).

*Hypoestes forskaolii* (Vahl) R.Br.

Erect shrubby herb or small shrub, up to 2 m high. Flowers small, aggregated, white with purple marks on the inner part of the hood. Stamens white.

**Flowering:** May-August. **Habitat:** Light shade in young or disturbed cedar forest or riparian forest. **Altitude:** 1000-1900 m. **Occurrence:** Common, gregarious. **Distribution:** Tropical Africa.

**Localities:** Likulezi River Gorge, *Chapman JD & Chapman EG 7686* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7938* (FHO). Likabula Valley, along the Lichenya path, *Chapman JD & Chapman EG 8530* (FHO). Head of the Nandiwo Stream, below Litakala Peak, *Chapman JD & Chapman EG 8595* (FHO).

*Hypoestes triflora* (Forssk.) Roem. & Schult.

Weak-stemmed perennial herb or semi-scrambling shrub, up to 2 m high. Flowers white with purple markings or pale purple, stamens pale purple.

**Flowering:** June-September. **Habitat:** Beside paths and streams, in light shade, in montane forest. **Altitude:** 1300-1900 m. **Occurrence:** Locally common or abundant. **Distribution:** Guinea, Bioko and Cameroon to Ethiopia, and south to South Africa (KwaZulu-Natal), Swaziland and Angola.

**Localities:** Phalombe Gorge, *Chapman JD & Chapman EG 7937* (FHO). Head of the Nandiwo Stream, at the foot of Litakala Peak, *Chapman JD & Chapman EG 8591* (FHO). Head of the Napolo Valley, Mchese Mt., western slopes, *Chapman JD & Chapman EG 8691* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9230* (FHO). Chisongeli forest, Muluzi River catchment, *Chapman JD & Chapman EG 9343* (FHO).

*Isoglossa grandiflora* C.B. Clarke

Weak-stemmed, spreading soft-wooded shrub, up to 2 m high. Inflorescence sticky, aromatic. Flowers pale mauve.

**Flowering:** June-July. **Habitat:** By streams in forest. **Altitude:** 900-1250 m. **Occurrence:** Locally abundant, forming clumps. **Distribution:** Malawi.

**Localities:** Northern foot of Mchese Mt. along the Nandiwo Stream, *Chapman JD & Chapman EG 8622* (FHO). Nampende Valley, Mchese Mt, *Chapman JD & Chapman EG 9185* (FHO).

*Isoglossa milanjiensis* S. Moore

Shrubby, weak-stemmed, perennial herb or shrub, up to 2.5 m high. Flowers mainly brownish-white; the petals brown or mauve fading to white at the tip. Style mauve, stigma white.

**Flowering:** May-November. **Habitat:** Submontane forest. **Altitude:** c. 1800 m. **Occurrence:** Locally abundant. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG 8514* (FHO). Big Ruo Valley, *Chapman JD & Chapman EG 9398* (FHO).

*Justicia mollugo* C.B. Clarke

Herb, up to 15 cm high. Flowers white or pink, with pink markings.

**Flowering:** February-June. **Habitat:** *Brachystegia* woodland, on paths or mossy banks. **Altitude:** 1000-1800 m. **Distribution:** Tanzania, D.R. Congo, Burundi, Zambia, Malawi, Mozambique and Angola.

**Localities:** Mchese Mt., western slopes above Ulolo, *Goyder DJ & Paton AJ 3647* (K). Skyline path to Chambe Basin, *Goyder DJ et al. 3198* (K).

*Justicia nyassana* Lindau

Herb, up to 60 cm high. Inflorescence very dense, oblong. Bracts green, hairy. Flowers small, white, only one or two out at one time.

**Flowering:** April-September. **Habitat:** Amongst rocks near the river in *Newtonia* forest. **Altitude:** 950-1200 m. **Distribution:** Central African Republic, Sudan, D.R. Congo (Kinshasa), Burundi, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likabula Valley, *Chapman JD 570* (K). Entrance to the Crater, *Strugnell AM et al. 54* (FHO).

*Justicia striata* (Klotzsch) Bullock

Well-branched herb, up to 60 cm high. Flowers white with purple marks on the lip.



**Flowering:** April. **Habitat:** *Brachystegia* woodland and amongst grass in newly planted Pine Plantation. **Altitude:** c. 850 m. **Occurrence:** Extremely common. **Distribution:** Widespread in eastern and southern tropical Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9039* (FHO).

### *Justicia striolata* Mildbr.

**Herb**, up to 50 cm high. **Flowers** pale purple with dark purple stippling.

**Flowering:** May. **Habitat:** On seepage rocks or damp soil on the forest floor. **Altitude:** c. 1100 m. **Occurrence:** Common and locally abundant. **Distribution:** S.E. D.R. Congo, Tanzania, Zambia and Malawi.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9093* (FHO).

### *Lepidagathis andersoniana* Lindau

Perennial **herb**, with a woody root-stock, up to 1 m high. **Flowers** greyish-white, the lobes tipped with dark mauve and the lip with a rusty spot inside.

**Flowering:** February. **Habitat:** On a fire trace burnt annually in woodland. **Altitude:** c. 850 m. **Distribution:** D.R. Congo, Rwanda, Burundi, East Africa, Malawi and Mozambique.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9494* (FHO).

### *Mellera lobulata* S.Moore

Weak-stemmed, spreading **shrub**, up to 3 m high. **Leaves** glabrous or very sparsely hairy, mainly on the veins below. Strongly aromatic. **Inflorescence** sticky. **Flowers** dull white, edged with purple, **anthers** purple.

**Flowering:** July-August. **Habitat:** Understorey of riparian forest. **Altitude:** 750-1050 m. **Occurrence:** Locally dominant. **Distribution:** Central African Republic, Ethiopia, Sudan, D.R. Congo, Rwanda, Burundi, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Mchese Mt, near Nampende Stream, *Chapman JD H/673* (K). Likulezi River Gorge, *Chapman JD & Chapman EG 7688* (FHO). Mchese Mt., along the Nthambi Stream above Misomali, *Chapman JD & Chapman EG 8825* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9231* (FHO).

### *Mellera submutica* C.B.Clarke

Weak-stemmed **herb**, up to 75 cm high. **Leaves** hairy, densely so on the lower surface. Strongly aromatic. **Inflorescence** sticky. **Flowers** mauve with coppery-yellow centre, **stamens** light mauve.

**Flowering:** July. **Habitat:** Riparian forest. **Altitude:** c. 950 m. **Distribution:** D.R. Congo, Tanzania, Zambia and Malawi.

**Localities:** Low down the western slopes of Mchese Mt., Nanthali Stream, *Chapman JD & Chapman EG 8731* (FHO). Likabula Valley, Chapaluka path, *Strugnell AM 4* (FHO).

### *Mimulopsis solmsii* Schweinf.

Soft-wooded **shrub**, up to 3 m high. Aromatic. Pale mauve **flowers** with yellow centre.

**Flowering:** August. **Habitat:** Montane forest. **Altitude:** c. 1800 m. **Occurrence:** Locally dominant **Distribution:** Bioko, Cameroon, S.E. Nigeria, Sudan, E. D.R. Congo, Rwanda, Burundi, eastern Africa from Ethiopia to Zimbabwe. **Comments:** Sporadic flowering each year but mass flowering occurs occasionally, after which the plants seed and die. The seedlings thickly cover the forest floor.

**Localities:** Madzeka Path, *Chapman JD & Chapman EG 8003* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9241* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9443* (FHO).

### *Phaulopsis imbricata* (Forssk.) Sweet

Semi-prostrate **herb**. The whole plant is slightly aromatic. **Flowers** small, white, with a long **corolla tube** and corolla segments equal.

**Flowering:** June-September. **Habitat:** Understorey of riparian forest or *Brachystegia* woodland. **Altitude:** 750-1300 m. **Distribution:** Ethiopia, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Phalombe area, *Chapman JD H/667* (K). Likulezi River Gorge, *Chapman JD & Chapman EG 7689* (FHO). Ruu Gorge, *Müller T 1498* (K).

### *Pseuderanthemum subviscosum* (C.B.Clarke) Stapf

**Herb** or soft-stemmed shrub, up to 2 m high. **Flowers** pinkish-white or pale mauve with a long **corolla tube**. Flowers open successively in groups up the inflorescence. **Capsule** glabrous, less than 3 cm long.

**Flowering:** August-September. **Fruiting:** October. **Habitat:** Riparian forest. **Altitude:** 850-1200 m. **Occurrence:** Occasional to common, locally abundant. **Distribution:** Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Just inside the entrance to the Lauderdale Crater, *Chapman JD 6485* (FHO). Head of the Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6743* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 8011* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8814* (FHO). Mchese Mt., Nthambi Gorge, above Misomali village, *Chapman JD & Chapman EG 8847* (FHO). Ruu Gorge, *Strugnell AM 52* (FHO).

### *Ruellia prostrata* T.Anderson

Perennial **herb**, up to 40 cm high when flowering. **Flowers** mauve, trumpet-shaped.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Far down the Likabula Valley, *Chapman JD & Chapman EG 8955* (FHO).

### *Thunbergia alata* Sims

Herbaceous **climber** or trailing plant to 2 m long or more. **Flowers** lemon yellow with a brown centre.



**Flowering:** June. **Habitat:** Forest edge. **Altitude:** c. 800 m. **Distribution:** Throughout tropical Africa and into South Africa (KwaZulu-Natal). **Localities:** Great Ruo Gorge, *Richards HM 16758* (K).

### *Thunbergia lancifolia* T.Anderson

Perennial herb, up to 40 cm high. Leaves lanceolate. Flowers large, purple with yellow throat. Sepals densely glandular-hairy.

**Flowering:** November. **Habitat:** On fire trace in woodland. **Altitude:** c. 850 m. **Distribution:** D. R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola. **Localities:** Far down the Likabula valley, *Chapman JD & Chapman EG 8944* (FHO).

## ALOACEAE

(previously in Liliaceae)

*Refs.* Carter, 1994, 1996; Lane, 2000, 2004; Reynolds, 1966, 1982.

### *Aloe arborescens* Mill.

Arborescent, much branched shrub, 2-5 m high, with terminal rosettes of fleshy leaves. Flowers scarlet.

**Flowering:** Mainly April-June. **Habitat:** High altitude rocky slopes, often in gullies or beside streams. **Altitude:** 2000-2400 m. **Occurrence:** Sporadic but often locally common. **Distribution:** From Malawi, through E. Zimbabwe and S. Mozambique to the western Cape in South Africa. **Comments:** One specimen (*Chapman JD & Chapman EG 8160*) was flowering in October.

**Localities:** Path from Thuchila hut to head of Ruo Basin, *Brummitt RK 9724* (K). West Peak of Sapitwa, *Chapman JD & Chapman EG 8160* (MO). Chisepu, at the foot of Sapitwa on the Thuchila Shelf, *Chapman JD & Patel IH 5792* (FHO). Base of West Peak, *Richards HM 16637* (K).

### *Aloe buchananii* Baker

Subcaulescent herb, about 85 cm high when flowering. Leaves distichous, conspicuously white-spotted on the convex surface near the base. Flowers salmon-pink.

**Flowering:** March-April. **Habitat:** Open *Brachystegia* woodland or montane grassland. **Altitude:** 1000-1950 m. **Distribution:** So far, known only from Malawi.

**Localities:** Below Thuchila hut to west, *Brummitt RK 9617* (K). Chambe path from Likabula and Chambe Plateau, *Chapman JD 532* (K). Likabula Valley, *Chapman JD & Chapman EG 8992* (FHO).

### *Aloe chabaudii* Schönland

var. *mlanjeana* Christian

Acaulescent herb, 50-80 cm high. Fleshy leaves in a basal rosette. Flowers orange and coral-pink to yellow.

**Flowering:** May-June. **Habitat:** Growing on large rocks or sheet rock either in the open or in open *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** S. Malawi.

**Localities:** Likulezi Gorge, *Chapman JD & Chapman EG 7681* (MO). Chambe path, *Richards HM 16720* (K). Likabula Valley, Lichenya path, *Strugnell AM s.n.* (Photo, FHO).

### *Aloe christianii* Reynolds

Succulent, erect or procumbent herb, up to 2-3 m high when flowering. Inflorescence many-branched from about the middle of the peduncle. Flowers uniformly orange-pink.

**Flowering:** May. **Habitat:** In dense, tall grass along with small trees, e.g. *Combretum molle* and *Cussonia arborea*. **Altitude:** c. 1200 m. **Occurrence:** Fairly common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likulezi Ng'ono Valley, *Chapman JD & Chapman EG 7525* (MO).

### *Aloe mawii* Christian

Arborescent shrub, up to 2 m high, with a simple or once-branched stem. Racemes held horizontally, with the flowers on one side of the rhachis. Flowers red or orange.

**Flowering:** May-June. **Habitat:** Cliff faces, sheet rock or rocky slopes with very shallow soil. **Altitude:** 1500-1950 m. **Occurrence:** Sporadic. **Distribution:** S.E. Tanzania, S. Malawi and N. Mozambique.

**Localities:** Chambe West Face above Mwana Mulanje, *Chapman JD & Chapman EG 7765* (MO). Lichenya Plateau, by Simpson's Peak, *Richards HM 16561* (K). Hills above Great Ruo Gorge, *Richards HM 16771* (K).

### *Aloe menyharthii* Baker var. *menyharthii*

Acaulescent herb, 1-2 m high when flowering. The top third of the leaf is usually withered and the upper surface of the lower part conspicuously marked with elongated, white blotches. Flowers coral-red.

**Flowering:** June. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 800-1200 m. **Occurrence:** Fairly common. **Distribution:** S. Malawi and Mozambique (Tete Province). **Localities:** Side of Mt. Mulanje above Fort Lister forestry depot on path to Sombani, *Brummitt RK 11365* (K). Likabula Valley, Lichenya path, *Strugnell AM s.n.* (Photo, FHO).

## AMARANTHACEAE

### *Achyranthes aspera* L.

var. *pubescens* (Moq.) C.C.Towns.

Bushy, perennial herb with long, arching stems. Inflorescence a lax spike. Flowers pale green with cream bracts.

**Flowering:** July. **Habitat:** In light shade of riparian forest. **Altitude:** c. 1000 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9232* (FHO).



***Achyranthes aspera* L. var. *sicula* L.**

Slender, perennial herb, up to 1 m high. Young leaves silvery-green below. Flowers purplish-green, small (up to 3 mm long).

**Flowering:** August-September. **Habitat:** Weed of cultivated plots. **Altitude:** c. 1400 m. **Occurrence:** Local. **Distribution:** Widespread in tropical Africa. **Localities:** Top of the Phwera River Valley, *Strugnell AM 55* (FHO).

***Cyathula cylindrica* Moq.**

Rambling, semi-scrambling shrub, up to 2 m high. Angled, striated stem. Inflorescences terminal, spikes of congested clusters of cream flowers.

**Flowering:** July. **Habitat:** Along rocky, only slightly shaded, streambanks in forest. **Altitude:** 1250-1800 m. **Distribution:** Widespread from Cameroon and Sudan to South Africa. **Localities:** Phalombe Gorge, *Chapman JD & Chapman EG 7974* (MO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9186* (FHO).

**AMARYLLIDACEAE**

***Crinum macowanii* Baker**

Bulbous herb. Leaves present at flowering, 10-130 cm long, no obvious midrib, slightly to markedly undulate on the margins. Perianth segments white with dark pink to crimson streak on outside only. Anthers dark.

**Habitat:** Damp hollows (dambos). **Distribution:** D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Angola and South Africa. **Localities:** Bwaibwai at the western foot of Mchese Mt. *Chapman JD s.n.* (Photo, FHO).

***Cyrtanthus welwitschii* Hiern ex Baker**

Bulbous herb, up to 30 cm high when flowering. Leaves emerge after the flowers. Inflorescence of 3-8 flowers in an umbel. Flowers orange-red, perianth tube narrow, funnel-shaped.

**Flowering:** September-November. **Habitat:** Burnt, montane grassland, often in damp hollows. **Altitude:** c. 2000 m. **Occurrence:** Sporadic but locally abundant. **Distribution:** S. Malawi and Angola.

**Localities:** Lichenya Plateau, C.C.A.P. cottage path at the Likabula Valley-Linji Plateau divide, *Chapman JD & Chapman EG 8039* (MO). Sombani Basin, *Chapman JD & Chapman EG 8783* (FHO). Lichenya Plateau, *Pawek J 3889* (K).

***Haemanthus multiflorus* Martyn**

Bulbous herb, c. 30 cm high. Leaves large, broadly elliptic. Inflorescence a dense umbel up to 15 cm in diameter, many flowered. Flowers red, perianth tube about 1 cm long, pedicels about 3 cm long.

**Flowering:** November. **Habitat:** Woodland and *Eucalyptus* plantations. **Altitude:** c. 900 m. **Occurrence:** Local. **Distribution:** Throughout tropical Africa. **Localities:** Chitakali, F.R. boundary, *Chapman JD & Chapman EG 6841* (FHO).

**ANACARDIACEAE**

***Lannea discolor* (Sond.) Engl.**

Tree, up to 15 m high. Leaves densely tomentose below, whitish, felted, appearing after the flowers. Flowers yellowish-green.

**Fruiting:** October. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 950 m. **Distribution:** D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, Swaziland and South Africa (Transvaal).

**Localities:** Mchese Mt., low down the western slopes above Bwaibwai village, *Chapman JD & Chapman EG 8915* (FHO).

***Lannea edulis* (Sond.) Engl. var. *edulis***

Suffrutex, up to 30 cm high. Plants densely tomentose when young. Flowers appearing before or with the young leaves.

**Habitat:** *Brachystegia* woodland. **Distribution:** Central African Republic, D.R. Congo, Uganda, Tanzania, Malawi, Angola and South Africa (Transvaal).

**Localities:** Likabula timber depot, *Clements JB 142* (FHO)

***Lannea schimperi* (Hochst. ex A.Rich.) Engl.**

Tree, up to 8-10 m high. Leaves appear after the flowers. Rusty-orange indumentum on lower leaf surface and inflorescence rhachis. Flowers greenish-yellow, in tight catkins.

**Flowering:** September. **Habitat:** *Brachystegia* woodland and rocky slopes. **Altitude:** 1000-1400 m. **Occurrence:** Sporadic to fairly common. **Distribution:** Tanzania and Malawi. **Comments:** The above specimens are probably var. *stolzii*. *Chapman JD 403* (FHO), collected between the Likabula and Thuchila Rivers, is leafless and therefore difficult to put to species. The rusty indumentum on the inflorescence indicates it could be *L. schimperi*.

**Localities:** Mchese Mt., on the ridge leading to the Dome, *Chapman JD & Chapman EG 8835* (FHO). Mchese Mt. foot, near the Nampende Stream, *Chapman JD & Chapman EG 9121* (FHO).

***Ozoroa reticulata* (Baker f.) R. & A.Fern.**

Shrub or tree, up to 7 m high. Leaves oblong-elliptic, dark green and shiny above, softly hairy, whitish-green in colour. Flowers small, white, not fragrant. Fruits ripening black.

**Flowering:** December-January. **Fruiting:** January-August. **Habitat:** Miombo woodland or tall grassland with scattered small trees. **Altitude:** 950-1400 m. **Occurrence:** Sporadic, not common. **Distribution:** Zambia, Malawi, Mozambique, Zimbabwe and Botswana.

**Localities:** Lower slopes between Likabula, Likulezi and Phalombe Valleys, *Chapman JD 500* (FHO). Below the Linji



cliffs, *Chapman JD & Chapman EG 7011* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 7357* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9137* (FHO).

***Rhus acuminatissima* R. & A.Fern.**

Shrub or small tree, up to 5 m high. Slender petioles, up to 10.5 cm long. Leaflets lanceolate, narrowing to a subfiliform apex; white, ciliate margins. Flowers tiny, green.

**Flowering:** March. **Habitat:** Woodland. **Altitude:** c. 1250 m. **Occurrence:** Occasional. **Distribution:** Mt. Mulanje, Malawi and Mt. Ribáuè, Mozambique.

**Localities:** Nasato Stream source, foot of the Cilemba cliffs in the Likabula valley, *Chapman JD & Chapman EG 7376* (FHO).

***Rhus longipes* Engl. var. *longipes***

Shrub or small tree, up to 15 m high although usually much less than this. Arching branches. Leaflets elliptic to broadly elliptic; obtuse to acuminate at the apex.

**Flowering:** July-August. **Fruiting:** September-October. **Habitat:** Riverine forest fringes; *Brachystegia* woodland, usually near rivers. **Altitude:** 800-1200 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa.

**Localities:** Near Thuchila River, *Chapman JD 388* (FHO). Along the Nkolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6739* (FHO). Likabula River, near the forestry depot, *Chapman JD & Chapman EG 7172* (FHO). Phalombe River, *Chapman JD & Chapman EG 8084* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8781* (FHO).

***Rhus monticola* Meikle**

Shrub, up to 2.5 m high. Older branchlets reddish-brown. Leaves trifoliate, narrowing to an acuminate tip. Petioles and midribs red. Flowers tiny, green. Fruits red.

**Flowering:** February-August. **Fruiting:** February-August. **Habitat:** Evergreen forest, forest edge, among rocks or other shrubs in montane grassland. **Altitude:** 1850-2350 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Chambe-Thuchila path, *Chapman JD 606* (FHO). Crest of the path from Lichenya forestry hut to Likabula-Thuchila, *Chapman JD 5863* (FHO). Cilemba Peak, *Chapman JD & Chapman EG 7215* (FHO). Likabula Valley, C.C.A.P. path, *Chapman JD & Chapman EG 7263* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7941* (FHO). Thuchila Shelf, *Chapman JD & Patel IH 5757* (FHO).

***Rhus natalensis* Bernh. ex Krauss**

Straggling shrub or small tree, up to 15 m high. Trifoliate leaves, slightly discoloured, small, undulate-crenate at the margin. Flowers tiny, creamy-white.

**Flowering:** March-May. **Fruiting:** May-July. **Habitat:** Forest edge, edge of stream-fringing forest, rocky river banks. **Altitude:** 900-1400 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Phalombe River, *Chapman JD 568* (FHO). Source of the Nasato Stream, at the foot of the Cilemba cliffs in the Likabula Valley, *Chapman JD & Chapman EG 7382* (FHO). Chambe Peak, above Mwana Mulanje, *Chapman JD & Chapman EG 7599* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7647* (FHO). Western slopes of Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG 8735* (FHO). Well up the Sombani path above the Fort Lister Gap, *Chapman JD & Chapman EG 8786* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9188* (FHO).

***Rhus tenuinervis* Engl.**

var. *meikleana* R. & A.Fern.

Shrub or small tree, up to 6 m high. Leaflets discolorous, 2-3 times longer than broad. Elliptic to ovate, margin dentate-crenate. Tiny, slightly scented flowers.

**Flowering:** April. **Fruiting:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1100 m. **Distribution:** Tanzania, Malawi and Mozambique.

**Localities:** Likabula River, near the forestry depot, *Chapman JD & Chapman EG 7165* (FHO). Malere Rock, Thuchila River, *Chapman JD & Chapman EG 7709* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8487* (FHO). Bottom of Chikomwe Hill, Likulezi R.C. Catechist Centre, *Chapman JD & White F 8438* (FHO).

***Rhus vulgaris* Meikle**

Shrub or small tree, up to 9 m high. Branches yellowish or brownish-red. Leaflets ovate to obovate, petioles and young leaves densely yellowish pubescent.

**Flowering:** October. **Habitat:** On rocky outcrops and slopes in *Brachystegia* woodland or among bracken, grass and shrubs. **Altitude:** c. 1400 m. **Distribution:** Cameroon, Central African Republic, D.R. Congo, Rwanda, Burundi, Sudan, Ethiopia, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likulezi Stream, *Chapman JD 455* (FHO). Well up the Sombani path, above the Fort Lister forestry office, *Chapman JD & EG 8785* (FHO).

***Sorindeia madagascariensis* Thouars**

Small, spreading, evergreen tree, up to 9 m high. Cut twigs exude a reddish sap which smells like mangos. Imparipinnate, glabrous leaves, up to 60 cm long. Inflorescences usually arising from below the leaves. Flowers deep pink. Fruits ripen yellowish-orange.

**Flowering:** June. **Fruiting:** September-October. **Habitat:** Streambanks of riverine forest. **Altitude:** 560-950 m. **Distribution:** Somalia, Kenya, Tanzania, Malawi, Mozambique, Madagascar, Comores and Mauritius.

**Localities:** From Thuchila to Likabula, *Chapman JD 437* (FHO). Lichenya F.R., Milonde Court, *Chapman JD 6615* (FHO). Esperanza, just above Manager's house, *Chapman JD & Chapman EG 6831* (FHO). Chitakali Stream at Boma Path, *Chapman JD & Chapman EG 6844* (FHO). Malere Rock, Thuchila River, *Chapman JD & Chapman EG 7714* (FHO).



Limbuli, estate boundary, at the Phwera Stream waterfall, *Chapman JD & Chapman EG 9358* (FHO).

*Trichoscypha ulugurensis* Mildbr.  
ssp. *ulugurensis*

Tree, up to 15 m high. Imparipinnate leaves, up to 50 cm long, margin very undulate. Petioles and rhachis reddish-brown. Inflorescences terminal. Flowers greenish with deep red ovary. Fruits dull purple.

**Flowering:** July. **Fruiting:** October-December. **Habitat:** Riverbank tree in forest. **Altitude:** 650-900 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola. **Comments:** Its common name is 'Agony tree'. Contact with the tree causes pain which lasts for several days. **Localities:** The Crater, Mulosa Stream, *Chapman JD 610* (FHO). Along the Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6753* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6933* (FHO). Little Mulosa River, near the bridge on the main road, *Chapman JD & Chapman EG 8126* (FHO).

**ANNONACEAE**

*Refs. Verdcourt, 1971 a & b.*

*Artabotrys brachypetalus* Benth.

Large, branched liane, reaching the crowns of 12 m high trees. Bark rather corky, pale brown. Stem beset with well-spaced 'pegs'.

**Habitat:** Closed woodland among scattered rocks. **Altitude:** c. 1000 m. **Distribution:** S.E. Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and South Africa.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9218* (FHO).

*Artabotrys monteiroae* Oliv.

Woody climber, reaching the crowns of trees up to 20 m high. Climbs by means of hooks developed from short, curved flowering shoots. Flowers yellow, petals densely pubescent. Carpels ripening red.

**Flowering:** September. **Fruiting:** January-May. **Habitat:** In and at the edge of riparian forest, river banks in *Brachystegia* woodland. **Altitude:** 800-1350 m. **Distribution:** Ethiopia, D.R. Congo, Rwanda, Burundi, Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Angola and South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Chitakali Stream (east branch), *Chapman JD & Chapman EG 6902* (FHO). Likabula River, at the Likabula forestry depot, *Chapman JD & Chapman EG 7136* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8850* (FHO). Chisongole Forest, *Chapman JD & Chapman EG 9545* (FHO).

*Cleistochlamys kirkii* (Benth.) Oliv.

Shrub or small tree, up to 7.5 m high. Raggedly scaling bark. Leaves oblong or obovate, rounded

at the apex. Flowers creamy-white, solitary, axillary. Carpels subsessile, purplish-black when ripe.

**Fruiting:** August. **Habitat:** On kopjes in dry woodland and scrub. **Altitude:** c. 800 m. **Distribution:** S.E. Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9236* (FHO).

*Dielsiothamnus divaricatus* (Diels) R.E.Fr.

Semi-scandent shrub or small tree, up to 4 m high and 5 m wide. Flowers solitary, brownish-yellow. Fruit cylindric, not constricted between the seeds.

**Flowering:** June. **Habitat:** On rocky slopes. **Altitude:** c. 850 m. **Distribution:** S. Tanzania, Malawi and N. Mozambique.

**Localities:** Slopes of Chikomwe Hill, Likulezi R.C. Catechist Centre, *Chapman JD & Chapman EG 7722* (FHO).

*Hexalobus monopetalus* (A.Rich.) Engl. & Diels var. *obovatus* Brenan

Spreading shrub or small tree, up to 6 m high. Leaves oblong to oblong-obovate, pubescent below near the midrib only. Subsessile flowers.

**Fruiting:** August. **Habitat:** Among rocks in miombo woodland. **Altitude:** c. 1100 m. **Distribution:** D.R. Congo, W. Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Mchese Mt, *Chapman JD & Chapman EG 9251* (FHO).

*Monanthotaxis buchananii* (Engl.) Verdc.

Syn. *Popowia buchananii* (Engl.) Engl.

Semi-scandent shrub or woody climber, up to 6 m high. Leaves narrowly oblong, glaucous below. Flowers greenish-yellow. Carpels 1-2 seeded, orange-red when ripe.

**Flowering:** November-January. **Fruiting:** March-May. **Habitat:** Rocky river banks and edges of riparian forest. **Altitude:** 600-950 m. **Occurrence:** Common. **Distribution:** Central African Republic and Sudan southwards as far as Mozambique.

**Localities:** Likabula Valley, near the forestry depot, *Chapman JD & Chapman EG 7439* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7649* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8383* (FHO). Low down the Likabula Valley, *Chapman JD & Chapman EG 8925* (FHO).

*Monanthotaxis chasei* (N.Robson) Verdc.

Syn. *Popowia chasei* N.Robson

Liane climbing by hooks. Leaves, up to 15 cm long, glaucous below, veins orange-red. Flowers yellowish. Carpels 1-4 seeded, constricted between the seeds, reddish-orange.

**Fruiting:** March-May. **Habitat:** Evergreen forest. **Altitude:** c. 600 m. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya F.R., T.A. Mabuka's, *Chapman JD & Chapman EG 7631* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8401* (FHO).



***Uvaria lucida* Benth.**

ssp. ***virens*** (N.E.Br.) Verdc.

Syn. *Uvaria virens* N.E.Br.

Climbing shrub or liane, reaching up to 25 m into the canopy. Flowers solitary, dull green to yellowish-green.

**Flowering:** November. **Habitat:** Riverine forest. **Altitude:** 850-1550 m. **Distribution:** S.W. Tanzania, Malawi, Mozambique, Zimbabwe, Swaziland and South Africa (KwaZulu-Natal).

**Localities:** Likabula Valley, source of Nasato Stream, *Chapman JD & Chapman EG 7345* (FHO). Phalombe River Gorge, *Chapman JD & Chapman EG 7966* (FHO). Low down Likabula Valley, *Chapman JD & Chapman EG 8935* (FHO).

***Xylopia aethiopica* (Dunal) A.Rich.**

Tree, up to 30 m high. Crown conical or semi-circular. Branchlets dark reddish-brown with conspicuous, lighter lenticels. Flowers greenish-white, petals long and narrow, pubescent outside. Carpels 1-8 seeded, not constricted between the seeds.

**Flowering:** November-December. **Fruiting:** December-January. **Habitat:** Evergreen forest. **Altitude:** 550-1200 m. **Distribution:** Senegal to Sudan and Uganda, southwards to Mozambique and Angola.

**Localities:** Likabula Forestry Station, *Chapman JD 494* (FHO). Nakatete Stream, below the Linji cliffs, *Chapman JD & Chapman EG 7027* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8398* (FHO). Esperanza, *Chapman JD & Chapman EG 8410* (FHO). Lichenya F.R., T.A. Mabuka's, Milonde Court, *Chapman JD & White F 8443* (FHO).

***Xylopia parviflora* (A.Rich.) Benth.**

Syn. *Xylopia holstii* Engl.; *Xylopia antunesii* Engl. & Diels var. *shirensis* Engl. & Diels

Tree, up to 25 m high. Bole shallowly fluted, smooth bark. Leaves softly hairy on both surfaces but especially below. Flowers solitary, yellowish-green.

**Habitat:** Transition woodland, rocky hillsides, streamsides. **Altitude:** c. 900 m. **Distribution:** Senegal to Cameroon, Gabon, Central African Republic, D.R. Congo, and from Sudan southwards to the South Africa (Transvaal).

**Localities:** Thuchila Valley, F.R. boundary at Beacon 58, Malere Road, *Chapman JD & Chapman EG 7706* (FHO). Mini-Mini, above the estate manager's house, *Chapman JD & Chapman EG 8405* (FHO). Malere Rock, Thuchila Valley, *Chapman JD & Chapman EG 8646* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9482* (FHO).

**ANTHERICACEAE**

(previously in Liliaceae)

*Refs.* Kativu, 1994 b & c ; Kativu & Nordal, 1993; Nordal et al., 1997.

***Chlorophytum andongense* Baker**

Herb, up to 1.75 m high. Abundant, fleshy roots

spreading just below the soil surface. Flowers green with transparent border.

**Flowering:** December. **Habitat:** Stony ground under seldom burnt woodland. **Altitude:** c. 800 m. **Occurrence:** Locally common. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula House Estate, *Chapman JD & Chapman EG 8322* (MO).

***Chlorophytum cameronii* (Baker) Kativu**

var. ***pterocaulon*** (Baker) Nordal

Syn. *Anthericum buchananii* Baker; *A. pterocaulon* Baker; *Chlorophytum pterocaulon* (Baker) Kativu

Herb, up to 1 m high. Leaves and peduncle glabrous. Flowers white.

**Habitat:** Between rivers, at edge of rocks. **Distribution:** Widespread in tropical Africa.

**Localities:** Between Likabula & Satwe Rivers, Lichenya path, *Goyder DJ et al. 3189* (K).

***Chlorophytum colubrinum* (Baker) Engl.**

Syn. *Dasystachys colubrina* Baker

Herb, up to 60 cm high. Leaves linear-lanceolate. Compact inflorescence of white flowers.

**Flowering:** February. **Habitat:** Beside a stream in a Pine Plantation. **Altitude:** c. 1800 m. **Occurrence:** Common.

**Distribution:** D.R. Congo, Rwanda, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Chambe Plateau, *Blackmore S et al. 333* (K).

***Chlorophytum comosum* (Thunb.) Jacq.**

Syn. *Anthericum comosum* Thunb.

Herb, up to 70 cm high. Lanceolate leaves tapering into a long, winged petiole. Inflorescence a spike of small, white flowers.

**Flowering:** August-November. **Habitat:** On mossy, flat rocks or bare soil in evergreen forest. **Altitude:** c. 900 m. **Occurrence:** Locally common. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Foot of Great Ruvo Gorge, Lujeri Power Station, *Brummitt RK & Banda EA 9204* (K). Along the Nakolu River, above Lauderdale, *Chapman JD & Chapman EG 6749* (FHO).

***Chlorophytum nidulans* (Baker) Brenan**

Syn. *Chlorophytum asphodeloides* C.H.Wright

Herb, up to 35 cm high. No basal leaves at flowering, stem leaves small, grey, pointed and adpressed to the stem. Inflorescence sometimes branched at the top of the peduncle. Flowers white.

**Flowering:** March-September. **Habitat:** In bare soil, among or on rocks in short, montane grassland. **Altitude:** 1500-2000 m. **Distribution:** N. Zambia and Malawi.

**Localities:** Just above Thuchila Hut, *Brummitt RK 9685* (K). Chambe Plateau, *Chapman JD 541* (K). Lichenya Plateau, about 1 mile from Lichenya Hut just off the path to the C.C.A.P. cottage, *Strugnell AM 13* (FHO).



***Chlorophytum nyasae* (Rendle) Kativu**  
Syn. *Anthericum nyasae* Rendle; *Chlorophytum glabriflorum* C.H.Wright

**Herb**, up to 1.4 m high. **Leaves** glabrous, linear-lanceolate, closely veined with prominent midrib and margins. **Inflorescence** branched, **flowers** white.

**Flowering:** Recorded in several months of the year but not September-November. **Fruiting:** August. **Habitat:** Montane grassland, wet flushes, rocky hillsides, stream-banks, shrubberies. **Altitude:** 1950-2100 m. **Occurrence:** Sporadic but can be locally abundant especially in wet places. **Distribution:** Tanzania, E. Zambia and Malawi.

**Localities:** Sombani Basin, near the forestry hut, *Blackmore S & Kupicha FK 1030* (K). Highest point of path from Likabula to Lichenya forestry depot, *Brummitt RK et al. 15911* (K). Above C.C.A.P. cottage, Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7288* (MO). Lichenya Plateau, *Chapman JD & Chapman EG 8300* (MO).

***Chlorophytum sphacelatum* (Baker) Kativu**  
var. ***milanjanum* (Rendle) Kativu**  
Syn. *Anthericum milanjanum* Rendle; *Anthericum whytei* Baker

**Herb**, up to 1.5 m high. Plants solitary or tufted. **Leaves** distichous, firm, narrowly lanceolate, scabrid or ciliate on margins. **Inflorescence** unbranched, moderately dense, **flowers** white. **Peduncle** flat, winged, scabrous or shortly ciliate on wings.

**Habitat:** Open woodland, grassland. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Namibia. **Localities:** Mt. Mulanje, *Whyte A s.n.* (BM).

***Chlorophytum subpetiolatum* (Baker) Kativu**  
Syn. *Anthericum subpetiolatum* Baker

**Herb**, singly or in clumps, up to 40 cm high. **Leaves** linear-lanceolate, clasping the base of the peduncle. **Flowers** white in a lax **raceme**.

**Flowering:** November. **Habitat:** Woodland. **Altitude:** c. 600 m. **Occurrence:** Common. **Distribution:** Widespread from Nigeria to Ethiopia and south, through Central and East Africa, to Angola, Mozambique and Zimbabwe. **Localities:** Mimosa Tea Research Station at the Segregation Plot, *Chapman JD & Chapman EG 9409* (FHO).

**APIACEAE**

(Umbelliferae)

*Refs.* Cannon, 1973; Townsend, 1985, 1989; Winter & Van Wyk, 1996.

***Agrocharis incognita* (Norman) Heywood & Jury**

Straggling or scrambling **herb**, up to 60 cm high. **Leaves** 2-3 pinnate. **Flowers** creamy white on very short pedicels, bracts linear with a ciliate

margin. **Fruits** with 5 ribs, each with 2-3 rows or hairs.

**Flowering:** May-September. **Fruiting:** September. **Habitat:** In forest, in light shade. **Altitude:** 1700-2200 m. **Distribution:** Sudan, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya Plateau, in the valley below the forestry hut, *Chapman JD 5652* (FHO). On the approach to Chinzama hut, from the Sombani direction, *Strugnell AM 87* (FHO).

***Alepidea peduncularis* A.Rich.**  
Syn. *Alepidea gracilis* Dümmer; *Alepidea swynnertonii* Dümmer

Robust, erect **herb** up to 1.25 m high. Basal **leaves** in a rosette, narrowly oblong-obovate, petiolate, marginal teeth terminate in long cilia. Stem leaves sessile. **Flowers** white.

**Flowering:** April-September. **Habitat:** *Brachystegia* woodland and upland grassland, especially on paths. **Altitude:** 1000-2200 m. **Occurrence:** Common. **Distribution:** Ethiopia, Sudan and the D.R. Congo to South Africa (Cape Province).

**Localities:** Lichenya Plateau, *Chapman JD 508* (FHO). Saddle by the Likabula-Lichenya path, *Chapman JD 5674* (FHO). Likabula Valley, *Chapman JD & EG Chapman 9031* (FHO).

***Centella asiatica* (L.) Urb.**  
Creeping **herb**. **Leaves** rounded to reniform, petiolate. **Flowers** greenish to deep red. **Fruits** rounded, laterally compressed. **Flowering:** October. **Fruiting:** October. **Habitat:** Damp grassland. **Distribution:** Widespread. **Localities:** Mt. Mulanje, *Whyte A 197* (BM).

***Centella glabrata* L. var. *natalensis* Adamson**  
Spreading or prostrate **herb**. **Leaves** narrowly lanceolate, in clusters along the stem. **Flowers** pale green. **Fruits** oblong, compressed.

**Flowering:** May-July. **Fruiting:** May-July. **Habitat:** Montane grassland, on rocky slopes. **Altitude:** c. 2000 m. **Distribution:** Mt. Mulanje and E. South Africa. **Localities:** Chinzama, above the forestry hut, *Chapman JD & Patel IH 5778* (FHO).

***Diplolophium buchananii* (Benth. ex Oliv.) Norman**

Robust, perennial **herb**, up to 3 m high. Often glaucous. **Leaves** glabrous, 2-ternate to pinnate, leaflets ovate to rounded. **Flowers** greenish or cream. **Fruits** narrowly elliptic, ribbed.

**Flowering:** August-December. **Fruiting:** August-December. **Habitat:** Rocky slopes in montane grassland. **Altitude:** 1800-2300 m. **Occurrence:** Scattered. **Distribution:** S. Malawi and Mozambique (Nampula & Zambézia). **Localities:** Likabula-Lichenya path, *Chapman JD 327* (FHO). Cilemba Peak above the Linji Plateau, *Chapman JD 6066* (FHO).



*Heteromorpha arborescens* (Spreng.) Cham. & Schltdl. var. *abyssinica* (A.Rich.) H.Wolff

Small tree, up to about 4 m high. Leaves trifoliate, leaflets sometimes with 2 divisions. Flowers creamy-yellow.

**Flowering:** February. **Habitat:** Forest edge, young secondary forest, montane scrub. **Altitude:** c. 1900 m. **Distribution:** Ethiopia and Sudan through East Africa to South Africa (Transvaal, KwaZulu-Natal, Cape Province), Swaziland and Lesotho.

**Localities:** Linji (Lichenya) Plateau, *Chapman JD* & *Chapman EG* 7223 (FHO).

*Heteromorpha arborescens* (Spreng.) Cham. & Schltdl. var. *montana* P.J.D.Winter

Similar to var. *abyssinica* but differs in its much narrower, often sickle-shaped leaflets which taper gradually to a pointed apex. Leaves trifoliate to pinnate.

**Flowering:** February-April. **Fruiting:** April. **Habitat:** Forest edges, *Brachystegia* woodland. **Altitude:** 900-1850 m. **Occurrence:** Common. **Distribution:** On mountains from Tanzania to Zimbabwe.

**Localities:** Lichenya Plateau, *Chapman JD* 520 (FHO). Between Likabula & Phalombe, *Chapman JD* 556 (FHO). Likabula Valley, Chapaluka track approaching the crossing, *Chapman JD* & *Chapman EG* 7361 (FHO).

*Hydrocotyle sibthorpioides* Lam.

A delicate, creeping herb rooting at the nodes. Leaves reniform, crenately divided into 5-7 lobes, glabrous on upper surface. Flowers white to greenish-yellow. Fruits broadly ellipsoid, laterally compressed.

**Flowering:** June, December. **Habitat:** Damp places in grassland. **Altitude:** 800-1850 m. **Distribution:** West Africa, D.R. Congo, Kenya, Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Lichenya Plateau, *Chapman JD* & *Chapman EG* 8517 (FHO). Likabula Valley, *Chapman JD* & *Chapman EG* 9260 (FHO). Lichenya Plateau, Nessa Path, *Chapman JD* & *Chapman EG* 9445 (FHO).

*Lefebvrea longipedicellata* Engl.

Syn. *Lefebvrea brevipes* H. Wolff.

Robust herb, up to 3.5 m high, with a hollow stem. Leaves pinnate, leaflets linear-lanceolate. Flowers green. Fruits broadly elliptic to pyriform, compressed.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Distribution:** D.R. Congo, Rwanda, Uganda, Kenya, Tanzania, Malawi and Mozambique.

**Localities:** Fort Lister Gap, foot of Mchese Mt. *Brummitt RK* & *Banda EA* 9898 (K).

*Peucedanum eylesii* Norman

Robust, perennial herb, up to about 2 m high. Leaves 3-pinnate. Flowers greenish-yellow.

Fruits oblong to elliptic, compressed with well-developed lateral wings.

**Flowering:** December. **Fruiting:** December. **Habitat:** Upland grassland. **Altitude:** c. 2200 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Cilemba Peak above the C.C.A.P. cottage on Linji Plateau, *Chapman JD* 6063 (FHO).

*Peucedanum nyassicum* H. Wolff

Aromatic, glabrous herb, up to 2 m high. Stem ridged. Leaves 2-pinnate. Flowers green or red. Fruits oblong to elliptic, compressed, winged.

**Flowering:** May-July. **Habitat:** Montane grassland, on pathsides, among shrubs or in rocky ground. **Altitude:** c. 2100 m. **Occurrence:** Occasional. **Distribution:** Mt. Mulanje, possibly N. Malawi and Mozambique (Gúruè).

**Localities:** Sombani Basin, *Brummitt RK* 11281 (K). Ridge above Lichenya Hut, *Richards HM* 16601 (K). Lichenya Plateau near C.C.A.P. cottage, *Wild H* 6142 (K).

*Peucedanum* sp.

Herb, 1.2 m high.

**Habitat:** Open hillsides. **Altitude:** c. 2200 m.

**Localities:** N.W. slopes of Ruw Basin, *Brummitt RK* 9711 (K).

*Pimpinella mulanjensis* C.C.Towns.

Herb, up to 1 m high. All parts often purplish. Small, dissected leaves. Flowers yellow. Fruits oval, laterally compressed.

**Habitat:** Wet grassland, thin peaty soil over rocks in montane grassland. **Altitude:** c. 2200 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, *Chapman JD* 476 (BM, K). Cilemba Peak, *Wild H* 6143 (BM, K).

*Steganotaenia araliacea* Hochst.

Small, deciduous tree, up to about 6 m high. Leafless at flowering and fruiting time. Leaves pinnate, up to 40 cm long. Leaflets with serrate margins. Flowers greenish-white to pinkish in wide spreading compound umbels. Fruits with 3 distinct dorsal ribs.

**Flowering:** July-August. **Fruiting:** July-August. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 950 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa and northern South Africa.

**Localities:** Thuchila River, *Chapman JD* 400 (FHO). Mchese Mt., low down on western slopes above Bwaibwai forest village, *Chapman JD* & *Chapman EG* 8821 (FHO).

## APOCYNACEAE

*Ancylobothrys taylorii* (Stapf) Pichon

Liane with copious latex. Coriaceous leaves, closely spaced veins almost at right angles to the



midrib. Flowers white, sweetly scented. Fruit up to 4 cm in diameter, yellow-orange when ripe.

**Flowering:** October-February. **Fruiting:** January-February. **Habitat:** Riparian forest, streambank transition woodland. **Altitude:** 800-1000 m. **Distribution:** Kenya, Tanzania, Malawi and Mozambique.

**Localities:** Likulezi River, *Chapman JD 465B* (FHO). Lower slopes of Mchese Mt. above the Fort Lister Gap, *Chapman JD & Chapman EG 8914* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9489* (FHO).

***Baissea viridiflora* (K.Schum.) De Kruif**

Woody climber with copious latex. Leaves glabrous, acuminate apex. Inflorescences mostly axillary. Flowers small, white, slightly fragrant.

**Flowering:** November. **Habitat:** Riparian forest. **Altitude:** c. 850 m. **Distribution:** D.R. Congo, Tanzania and Malawi.

**Localities:** Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6748* (FHO).

***Carissa bispinosa* (L.) Desf. ex Brenan**

Scandent shrub, up to 7 m high. Spines relatively few, branched or bifurcate, thinner than the stem. Leaves lanceolate to ovate, more than twice as long as broad. Flowers white, sweetly scented.

**Flowering:** November-December. **Fruiting:** May-September. **Habitat:** Understorey of evergreen forest. **Altitude:** 900-1850 m. **Occurrence:** Common. **Distribution:** Malawi, Mozambique, Zimbabwe, Swaziland and South Africa (E. Transvaal).

**Localities:** Chambe Basin, *Chapman JD 5634* (FHO). Chitakali Stream, near the Boma Path, *Chapman JD & Chapman EG 6887* (FHO). Lichenya Plateau, Nessa Path forest, *Chapman JD & Chapman EG 7002* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7940* (FHO). Ruo Gorge, just above the Savani Stream crossing, *Chapman JD & Chapman EG 8107* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8527* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8552* (FHO). Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG 8883* (FHO).

***Carissa spinarum* L.**

Syn. *Carissa edulis* (Forssk.) Vahl

Semi-scandent shrub, up to 5 m high. Spines simple. Leaves ovate-elliptic, moderately coriaceous. Flowers white inside, pink outside, scented.

**Habitat:** On termite mounds in woodland. **Altitude:** c. 750 m. **Distribution:** Senegal to Somalia and Sudan, southwards to South Africa (Transvaal) and Namibia.

**Localities:** 0.5 km from the Likabula forestry office, *Chapman JD & Chapman EG 8524* (FHO). Foot of the Likabula Valley near the forestry office, *Chapman JD & Chapman EG 9515* (FHO).

***Carvalhoa campanulata* K.Schum.**

Shrub or small tree, up to 5 m high. Opposite leaves and copious latex. Flowers bell-shaped, yellow, pendulous with very thin peduncles. Fruits pod-like, yellow-orange.

**Flowering:** October. **Fruiting:** December. **Habitat:** Understorey or edge of mid-altitude and montane forest. **Altitude:** 700-1350 m. **Distribution:** Kenya, Tanzania, Malawi and Mozambique.

**Localities:** Entrance to the Mulosa Gorge, leading to the Crater, *Chapman JD 6508* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6958* (FHO). Ruo Gorge, above the power station, *Chapman JD & Chapman EG 8307* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9356* (FHO).

***Funtumia africana* (Benth.) Stapf**

Tree, up to 25 m high. Bole slender, straight, smooth. Copious latex. Large opposite leaves. Flowers cream, in axillary clusters.

**Flowering:** October-December. **Fruiting:** November. **Habitat:** Evergreen forest. **Altitude:** c. 900 m. **Distribution:** Senegal eastwards to East Africa, southwards to Zimbabwe and Angola.

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD 6645* (FHO). Nkolu Stream, *Chapman JD & Chapman EG 6752* (FHO). Mimosa Tea Research Station, *Chapman JD & Chapman EG 8409* (FHO).

***Holarrhena pubescens* (Buch.-Ham.) Wall. ex G.Don**

Small tree, up to 6 m high. Bark corky and deeply fissured, grey-brown. Inflorescences axillary or leaf-opposed. Flowers white, jasmine-scented. Fruits slender, pendulous, paired carpels up to 30 cm long.

**Flowering:** December. **Fruiting:** June. **Habitat:** Miombo woodland. **Altitude:** c. 900 m. **Distribution:** D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Mchese Mt. foot, near the Nabwato Stream, *Chapman JD & Chapman EG 9116* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9428* (FHO).

***Landolphia buchananii* (Hallier f.) Stapf**

Liane, reaching the canopy up to 27 m high. Copious latex. Flowers in dense clusters, white, jasmine-scented. Fruits globose, up to 10 cm diameter, green with white mottling.

**Fruiting:** April-July. **Habitat:** Evergreen forest. **Altitude:** 1050-1700 m. **Distribution:** Eastern Africa from Ethiopia to Zimbabwe, with satellite populations in S.E. Nigeria, Cameroon and Angola.

**Localities:** Likabula Valley, Nasato Stream, *Chapman JD & Chapman EG 7422* (FHO). Likulezi River Gorge forest, *Chapman JD & Chapman EG 7694* (FHO). Entrance to Phalombe Gorge, *Chapman JD & Chapman EG 7868* (FHO). Chambe West Face Shelf forest, *Chapman JD & Chapman EG 8562* (FHO).

***Landolphia kirkii* Dyer**

Woody climber/scrambler which can reach the canopy. White latex. Leaves narrowly ovate, glossy on upper surface, undulating margins.



Flowers small, white, slightly fragrant. Fruit globular to pyriform, up to 5 cm diameter, green speckled with pale green.

**Flowering:** October. **Fruiting:** June. **Habitat:** Riparian forest and forest edge. **Altitude:** 850-1000 m. **Distribution:** From Kenya and S.E. D.R. Congo to South Africa (KwaZulu-Natal).

**Localities:** Lower part of the Mulosa (Crater) Gorge, *Chapman JD 6530* (FHO). Above Esperanza, *Chapman JD & Chapman EG 6702* (FHO). Likulezi River, below the gorge, *Chapman JD & Chapman EG 7732* (FHO).

### *Mascarenhasia arborescens* A.DC.

Shrub or small tree, up to 12 m high. Latex present. Lower leaf surface grey-brown. Flowers cream with yellow guide lines towards the tube. Fruits of paired, straight, divaricate follicles.

**Flowering:** November-December. **Fruiting:** January-June. **Habitat:** Rocky river banks in riverine forest. **Altitude:** 850-1000 m. **Distribution:** On the eastern side of Africa from the D.R. Congo and Kenya to Mozambique and Zimbabwe. Also in Madagascar and the Comores.

**Localities:** Likabula Valley, along the river, *Chapman JD & Chapman EG 6999* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8544* (FHO).

### *Oncinotis tenuiloba* Stapf

Large liane, which can reach up to 30 m high. Bark corky, much convoluted, raised corky brown lenticels which rub off easily. Copious latex. Axillary inflorescences of small, yellow-green flowers, honey-scented. Fruits of paired follicles, up to 25 cm long.

**Flowering:** October. **Fruiting:** October. **Habitat:** Riparian forest and forest edge. **Altitude:** 550-1000 m. **Distribution:** From Nigeria and Cameroon eastwards to Ethiopia and East Africa and southwards as far as South Africa (KwaZulu-Natal & Cape).

**Localities:** Entrance to the Mulosa (Crater) Gorge, *Chapman JD 6539* (FHO). Lichenya F.R., Milonde Court, *Chapman JD 6614* (FHO). Above Esperanza, Pamba Stream, *Chapman JD 6679* (FHO). Source of Nakolu Stream, *Chapman JD & Chapman EG 6779* (FHO). Along the Chitakali Stream, in the tea estate, *Chapman JD & Chapman EG 6950* (FHO).

### *Rauvolfia caffra* Sond.

Canopy tree, up to 30 m high with wide spreading crown. Abundant latex. Leaves confined to the ends of the branchlets. Many creamy-yellow flowers borne in dense heads, sweetly scented. Fruits red, globose or bilobed.

**Flowering:** August. **Habitat:** Riverine forest. **Altitude:** 800-1350 m. **Occurrence:** Very sporadic and local. **Distribution:** Widely distributed in tropical Africa and reaches South Africa (KwaZulu-Natal). **Comments:** The tree is leafless for about a month. The flowers follow the new leaves.

**Localities:** Mulosa Gorge Forest (to the Crater), *Chapman JD 6568* (FHO). Source of the Nasato Stream, under the Cilemba cliffs, Likabula Valley, *Chapman JD & Chapman*

*EG 7373* (FHO). Below the Chiphalombe Shelf, *Chapman JD & Chapman EG 7893* (FHO). Chiphalombe River, *Chapman JD & Chapman EG 7980* (FHO). Esperanza, *Chapman JD & Chapman EG 8000* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9246* (FHO).

### *Saba comorensis* (Bojer) Pichon

Massive liane, reaching at least 25 m high. Copious white latex. Flowers white, sweetly smelling, in dense terminal inflorescences. Fruits spherical, up to 6 cm diameter, yellow-orange when ripe. Seeds surrounded by a yellow, pleasantly astringent pulp.

**Flowering:** October-June. **Fruiting:** June-November. **Habitat:** Riverine evergreen forest. **Altitude:** 600-950 m. **Distribution:** Widespread throughout tropical Africa.

**Localities:** Nandiwo & Mulosa Streams (Likulezi area and the Crater), *Chapman JD 558* (FHO). Above Esperanza, Pamba Stream, *Chapman JD & Chapman EG 6686* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6736* (FHO). Nasato Stream, between Glenorchy and Likabula River, *Chapman JD & Chapman EG 7036* (FHO). Likabula River, near Likabula House, *Chapman JD & Chapman EG 7192* (FHO). T.A. Mabuka's, Lichenya F.R., *Chapman JD & Chapman EG 7630* (FHO).

### *Strophanthus courmontii* Sacleux ex Franch.

Liane, reaching to the mid-canopy or small tree up to 2.5 m high. Stems and older branches with corky protruberances. White latex exudes slowly. Flowers white streaked with purple, fragrant. Fruits of 2 divergent follicles, up to 25 cm long, brown with white lenticels.

**Fruiting:** July. **Habitat:** Riverine forest. **Altitude:** 550-1100 m. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe. **Comments:** Deciduous, the flowers appear after the leaves.

**Localities:** Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8665* (FHO). Lichenya F.R., T.A. Mabuka, Milonde Court, *Chapman JD & White F 8432* (FHO).

### *Strophanthus nicholsonii* Holmes

Shrub, up to 2 m high. Latex clear or orange. Leaves ovate, mid-green above, pale yellowish-green below, velvety feel. Paired follicles, up to 15 cm long, purplish-brown with white lenticels.

**Fruiting:** May. **Habitat:** On rocky outcrop. **Altitude:** c. 1200 m. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe. **Comments:** Deciduous, flowers appear before or with the leaves.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9079* (FHO).

### *Tabernaemontana elegans* Stapf

Shrub or small tree up to 5 m high. Corky bark. Leaves glabrous, veins straight with upcurved apex, fishbone-like. Flowers creamy white,



sweetly scented. Fruits of paired, warty mericarps.

**Fruiting:** April. **Habitat:** In scrub. **Altitude:** c. 800 m. **Distribution:** Somalia to South Africa (KwaZulu-Natal). **Localities:** Likulezi Farm, Phalombe, *Chapman JD & Chapman EG 7425* (FHO).

*Tabernaemontana stapfiana* Britten

Mid-canopy tree, up to 18 m high or more. Branches brown with conspicuous pale brown leaf scars. Flowers white with a pale green tube, fragrant. Fruits of separate, large sub-globose mericarps, dark green with with paler spots.

**Flowering:** November-December. **Habitat:** Montane forest. **Altitude:** 1500-1850 m. **Occurrence:** Common. **Distribution:** East Africa, Malawi, Mozambique and Zimbabwe. **Comments:** Very conspicuous tree when in flower.

**Localities:** Big Ruu Gorge, *Chapman JD 602* (FHO). Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG 8193* (FHO). Little Lichenya River, *Johnston-Stewart NGB 179* (FHO).

*Tabernaemontana ventricosa* Hochst. ex A.DC.

Small tree, up to 5 m high. Copious latex. Leaves, large, narrowly elliptic. Flowers white, sweetly scented. Separate mericarps, dark green, rounded.

**Flowering:** October. **Habitat:** Forest. **Altitude:** c. 800 m. **Distribution:** Nigeria to East Africa and southwards as far as South Africa (KwaZulu-Natal).

**Localities:** The Crater, *Chapman JD 607* (FHO). Mulosa Stream, at the Boma Water Intake, *Chapman JD 6542* (FHO). Entrance to the Crater Gorge, above Lauderdale, *Chapman JD 6589* (FHO). Great Ruu Gorge, *Johnston-Stewart NGB 148* (FHO).

*Voacanga thouarsii* Roem. & Schult.

Tree, up to 10 m high. Leaves thickly coriaceous, rounded at the apex. Calyx clasping the corolla and shed with it. Flowers creamy-yellow, foetid smell. Paired, separate mericarps, green with green speckling.

**Flowering:** November-January. **Fruiting:** November. **Habitat:** Streamsides and swampy areas. **Altitude:** 600-850 m. **Distribution:** Widespread in tropical Africa, Swaziland, South Africa (KwaZulu-Natal) and Madagascar. **Localities:** Just above the estate boundary, Chitakali, *Chapman JD & Chapman EG 6837* (FHO). Near Thornwood, on the main road, *Chapman JD & Chapman EG 7021* (FHO).

AQUIFOLIACEAE

*Ilex mitis* (L.) Radlk.

Tree, up to 20 m high but often shorter. Bark light grey-brown with prominent whitish

lenticels. Leaves narrowly elliptic. Dioecious. Flowers whitish. Fruit subglobose, red.

**Flowering:** August-October. **Fruiting:** December-August. **Habitat:** Forest edges, riparian forest, understorey in cedar forest, streambanks in grassland and forest, gullies. **Altitude:** 1200-2350 m. **Occurrence:** Fairly common. **Distribution:** On the mountains of West Africa, central and eastern Africa from Ethiopia to the western Cape in South Africa.

**Localities:** Likulezi river, *Chapman JD 464* (FHO). Chambe Basin, *Chapman JD 5632* (FHO). Near the source of the Pamba Stream, above Esperanza, *Chapman JD & Chapman EG 6715* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7009* (FHO). Chiphalombe River, *Chapman JD & Chapman EG 7902* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7933* (FHO). Foot of the West Peak, *Chapman JD & Chapman EG 8149* (FHO). Mchese Mt., Nampende Valley Forest, *Chapman JD & Chapman EG 9151* (FHO).

ARACEAE  
Ref. Mayo, 1985.

*Culcasia falcifolia* Engl.

Syn. *Culcasia scandens* auctt. non P.Beauv.

Herbaceous climber. Spathe white.

**Habitat:** Montane riverine forest. **Altitude:** 900-1100 m. **Occurrence:** Abundant. **Distribution:** Ethiopia, Sudan, Uganda, Kenya, Tanzania, D.R. Congo, Burundi, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Ruu Gorge, near power station, *Blackmore S & Brummitt RK 1483* (K). Lower slopes of Mulosa Gorge, *Chapman JD 6525* (FHO).

*Gonatopus angustus* N.E.Br.

Herb, up to 65 cm in leaf. Leaf bi- to quadri-pinnate, leaflets narrow. Inflorescence usually solitary, appearing just before the leaf. Spathe light yellowish-green with darker green speckling. Berries massed together on a short stem, red when ripe.

**Fruiting:** May. **Habitat:** In shallow concavities on top of rocks in fire-protected woodland. **Altitude:** c. 800 m. **Occurrence:** Locally common in small colonies. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal). **Localities:** Likabula Valley, *Chapman JD & Chapman EG 8778* (FHO).

*Gonatopus boivinii* (Decne.) Engl.

Tuberous herb, up to 1.6 m when flowering. Tuber subglobose. Petiole with conspicuous pulvinus. Spathe dull white.

**Flowering:** November. **Habitat:** In light shade of transition woodland. **Altitude:** c. 650 m. **Occurrence:** Gregarious. **Distribution:** D.R. Congo, Kenya, Tanzania (including Zanzibar and Pemba Islands), Zambia, Malawi, Mozambique, Zimbabwe and South Africa (KwaZulu-Natal). **Localities:** Mimosa Tea Research Station at the Segregation Plot, *Chapman JD & Chapman EG 9410* (FHO).



*Sauromatum venosum* (Ait.) Vent.

Herb, with distinctive, regularly and deeply divided leaf, up to 75 cm high. Tuber depressed-globose. Inflorescence appearing before the leaves. Spathe dull purplish-green on outside, reddish-purple on the inside. Strong carrion scent.

**Fructing:** February. **Habitat:** Riverine forest. **Altitude:** 1050-1750 m. **Occurrence:** Fairly common. **Distribution:** Cameroon, Central African Republic, Ethiopia, Uganda, Kenya, Tanzania, Zambia, Malawi, Angola.

**Localities:** Muluji Stream, above Chisambo, *Chapman JD & Chapman EG 8114* (MO). Path from Fort Lister Forestry Office to Sombani Plateau, *Chapman JD & Chapman EG 8354* (FHO).

## ARALIACEAE

*Cussonia spicata* Thunb.

Tree, up to 17 m high. Leaves digitate, in terminal bunches, up to about 1.4 m long (including petiole). Inflorescence spikes very dense with a distinct peduncle.

**Habitat:** Open rocky hillside, montane forest, grassland. **Altitude:** 900-2000 m. **Distribution:** Eastern side of Africa from Sudan to South Africa.

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD & Chapman EG 6634* (FHO).

*Polyscias fulva* (Hiern) Harms

Tree, up to 30 m high. Huge pinnate leaves, up to 1.5 m long. Leaflets dark above, densely yellow tomentose below. Inflorescence a complex of racemously arranged racemes.

**Habitat:** Forest. **Altitude:** 850-1600 m. **Distribution:** Widespread throughout tropical Africa.

**Localities:** Mulosa Stream, at the first dam, entrance to the Crater, *Chapman JD 6561* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 7657* (FHO).

*Schefflera goetzenii* (Hiern) Harms

Liane, which reaches the canopy or small tree, to about 8 m high. Digitate leaves on long petioles. Inflorescence a group of racemes of umbels.

**Flowering:** November. **Fructing:** January. **Habitat:** Montane forest. **Altitude:** 1100-1850 m. **Distribution:** D.R. Congo, East Africa, Malawi, Mozambique and E. Zimbabwe.

**Localities:** Below the west face of Chambe Peak, *Chapman JD & Chapman EG 7101B* (FHO). Ruu Gorge, at Savani Stream, *Chapman JD & Chapman EG 8099* (FHO). Close to site of old Boma hut, *Chapman JD & Chapman EG 8185* (FHO).

*Schefflera umbellifera* (Sond.) Baill.

Tree, up to 15 m high. Leaves digitate. Inflorescence a paniculate complex of umbels.

**Flowering:** April-May. **Fructing:** July-November. **Habitat:** Montane forest. **Altitude:** 1250-2000 m. **Distribution:** Malawi to South Africa (E. Cape Province).

**Localities:** Chambe Plateau, *Chapman JD 361* (FHO). Saddle at the east end of Chambe Peak, *Chapman JD 5606* (FHO). Lichenya Plateau, *Chapman JD 6287* (FHO). East branch of Chitakali Stream, *Chapman JD & Chapman EG 6899* (FHO). Approach to the Chiphalombe Shelf, *Chapman JD & Chapman EG 7858* (FHO). Ruu Gorge, at the Savani Stream crossing, *Chapman JD & Chapman EG 8102* (FHO).

## ARECACEAE (Palmae)

*Phoenix reclinata* Jacq.

Tree, up to 10 m high, growing in clusters. Leaves, up to 3 m long, arched and spreading, leaflets ranked in two rows, spiny petiole. Fruit orange-yellow to reddish-brown, thinly fleshy.

**Habitat:** Rocky slopes on or near seepage areas. **Distribution:** Senegal to Ethiopia, Djibouti and Somalia, eastern Africa as far as the eastern Cape, with an extension through S. D.R. Congo, Zambia, N. Botswana to R. Congo and N. Namibia.

**Localities:** Chambe West Face Shelf, *Chapman JD s.n.* (Photo, FHO).

*Raphia farinifera* (Gaertn.) Hylander

Tree, to 25 m or more high, trunk 10 m high. Leaves erect and slightly spreading. Fruits bright orangey-brown at maturity, cone-like, thick and oily when fresh, drying hard.

**Fructing:** August. **Habitat:** Along streamsides on the lower slopes. **Altitude:** c. 1100 m. **Occurrence:** Common. **Distribution:** East Africa, southern tropical Africa and Madagascar. **Comments:** Frequently planted.

**Localities:** Lower slopes along the Nambiya Stream near Fort Lister Forestry Office, *Chapman JD & Chapman EG 8812* (FHO).

## ARISTOLOCHIACEAE

*Aristolochia albida* Duch.

Soft-wooded twiner. Leaves ovate-triangular, cordate at the base. Long inflorescence, 6-14 flowered, flowers green and purple; large, persistent bracts. Fruits pyriform; basket-like when they are split open.

**Flowering:** April-May. **Fructing:** May-November. **Habitat:** Understorey of disturbed transition woodland; riverine forest/woodland. **Altitude:** 850-1100 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Chitakali, estate boundary, *Chapman JD & Chapman EG 6818* (FHO). Mchese Mt. at the Nandiwo Stream, *Chapman JD & Chapman EG 9106* (FHO).



*Aristolochia elegans* Mast.

Climber with slender, pendulous flowering stems. Leaves reniform-cordate, broader than long. Flowers solitary, large, mottled creamy-yellow and dark purple.

**Flowering:** September. **Habitat:** *Eucalyptus* plantation. **Altitude:** c. 750 m. **Distribution:** A native of S. America, introduced and naturalised. Now widespread in Africa.

**Localities:** Limbuli, base of Mt. Mulanje, *Chapman JD & Chapman EG 9288* (FHO).

**ASCLEPIADACEAE**

*Refs.* Goyder, 1995, 2001; Huber, 1957; Kupicha, 1984; Liede & Meve 1992.

*Aspidoglossum biflorum* E.Mey.

Herb, about 30 cm high arising from a fleshy tuber. Opposite, narrow linear leaves. Flowers 1-7 per node, greenish-cream.

**Flowering:** November. **Habitat:** Montane grassland. **Altitude:** 2040-2100 m. **Distribution:** Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, KwaZulu-Natal, E. Cape), Lesotho and Namibia.

**Localities:** Big Ruu Basin, *Chapman JD & Chapman EG 9376* (FHO). Path from Lichenya Plateau to Chambe (The Saddle), *Strugnell AM & Salubeni AJ 34* (FHO).

*Ceropegia achtenii* De Wild.

Erect herb. Tuber depressed-globose. Flowers green and purple, with a slender corolla.

**Flowering:** January. **Habitat:** Montane grassland. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Chambe cableway path, *Hilliard OM & Burt BL 4623* (K).

*Ceropegia claviloba* Werderm. var. *nov.*

Herbaceous climber or creeper. Tubers depressed globose, up to 3 cm across. Flowers cream flecked pale purple.

**Flowering:** February. **Habitat:** Amongst sedges in evergreen forest. **Altitude:** c. 1700 m. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Lichenya path, *Brummitt RK et al. 15946* (K).

*Ceropegia multiflora* Baker

Herbaceous twiner/climber, reaching up to 1.5 m. Small yellow flowers in clusters in axils of opposite, lanceolate leaves.

**Flowering:** February. **Habitat:** Undergrowth of transition woodland. **Altitude:** c. 850 m. **Distribution:** Southern Africa. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 9500* (FHO).

*Ceropegia papillata* N.E.Br.

Herbaceous climber, up to 1 m. Leaves spear-shaped. Flowers green with purple tips, hairy.

**Flowering:** February-March. **Habitat:** *Brachystegia* woodland, scrubby growth bordering evergreen forest. **Altitude:** c. 1500 m. **Distribution:** Tanzania and Malawi.

**Localities:** Chambe Plateau, path to forestry cottage, *Blackmore S et al. 318* (K). Chambe Plateau, *Jackson G 2164* (K).

*Ceropegia speciosa* H.Huber

Herbaceous twiner, up to 2 m. Leaves lanceolate with long, pointed apex, slender petioles. Inflorescence with 1-2 pendant recurved flowers. Flowers greenish-cream with purple lines, corolla inflated, lobes green with purple tips and hairs.

**Flowering:** February-March. **Habitat:** *Brachystegia* woodland, shrubberies. **Altitude:** 850-1000 m. **Distribution:** Tanzania and Malawi.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9508* (FHO). Mchese Mt., western slopes above Ulolo, *Goyder DJ & Paton AJ 3649* (K). Middle western slopes above Likabula, *Hepper FN 7365* (K).

*Ceropegia aff. achtenii* De Wild.

Slender, twining herb. Tuber round when small, irregularly lobed when large. Flowers dark red-purple and green.

**Flowering:** January-February. **Habitat:** Montane grassland and amongst sedges in wet peat. **Altitude:** 1950-2100 m.

**Localities:** Chambe-Thuchila path, *Hilliard OM & Burt BL 4601* (K). Sombani Basin, near Sombani Hut, *Hilliard OM & Burt BL 6140* (K). Sombani Valley, *Hilliard OM & Burt BL 6193* (K). Near Thuchila Hut, *Hilliard OM & Burt BL 6390* (K).

*Cynanchum validum* N.E.Br.

Soft-wooded, almost succulent, herbaceous twiner. Swollen nodes. Leaves cordate, opposite. Flowers greenish-yellow with maroon at the base.

**Flowering:** April. **Habitat:** Lithophytic forest. **Altitude:** c. 1200 m. **Distribution:** Eastern Africa from Ethiopia to Malawi.

**Localities:** Likabula Valley, Nasato Stream source, *Chapman JD & Chapman EG 7391* (FHO).

*Glossostelma carsonii* (N.E.Br.) Bullock

Syn. *Xysmalobium carsonii* N.E.Br.

Erect, perennial herb, up to 1 m high, with a branched, tuberous root. Leaves opposite, linear, up to 20 cm long. Flowers greenish-cream mottled with dark reddish-purple.

**Flowering:** October-February and June. **Fruiting:** February. **Habitat:** Open *Brachystegia* woodland. **Altitude:** 1000-1600 m. **Occurrence:** Occasional. **Distribution:** D.R. Congo, Rwanda, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8964* (FHO). Sombani path from Fort Lister Gap, *Goyder DJ & Paton AJ 3652* (K). Path from Likabula to Chambe, up the Chapaluka Stream, *Hilliard OM & Burt BL 4589* (K).



***Mondia whitei* (Hook.f.) Skeels**

Soft-wooded climber. Leaves large (up to 30 cm × 19 cm), cordate at base. Stipules form a reflexed, toothed frill.

**Habitat:** Riparian forest. **Altitude:** c. 1200 m. **Distribution:** From Guinea-Bissau eastwards, eastern side of Africa from Sudan to South Africa (KwaZulu-Natal). **Comments:** The roots are used as an aphrodisiac.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9211* (FHO).

***Pergularia daemia* (Forssk.) Chiov.**

Semi-woody climber/twiner, up to 5 m long. Opposite, cordate leaves. Copious latex. White, slightly fragrant flowers. Fruits paired, densely covered with long, mauve hairs.

**Flowering:** April-June. **Fruiting:** June. **Habitat:** Understorey of stream-fringing forest and bush; *Eucalyptus* plantations. **Altitude:** 850-1100 m. **Distribution:** Widespread in Africa.

**Localities:** Esperanza, *Chapman JD & Chapman EG 8448* (FHO). Northern foot of Mchese Mt., along the Nandiwo Stream, *Chapman JD & Chapman EG 8624* (FHO). Mchese Mt., Nabwato Stream, *Chapman JD & Chapman EG 9127* (FHO).

***Periploca linearifolia* Dill. & A.Rich.**

Twining climber with thin, reddish-brown, woody stems. Latex. Narrow, linear, opposite leaves. Flowers cream, with 5 wide-spread petals fringed with long hairs.

**Habitat:** Forest patches and edges. **Altitude:** c. 1400 m. **Distribution:** Ethiopia, East Africa, N.E. Zambia and Malawi.

**Localities:** Below the Chiphalombe Shelf, *Chapman JD & Chapman EG 8087* (FHO).

***Sarcostemma mulanjense* Liede & Meve**

Much branched, succulent herb/ shrub, with a dense, cushion-like habit at high altitudes but an arching growth form at lower altitudes. Leaves reduced to scales. Flowers creamy-white, with reddish-tinged base and median stripe. Height of the central gynostegium exceeds its diameter.

**Flowering:** November-April. **Habitat:** Rocky outcrops. **Altitude:** 900-2100 m. **Distribution:** Mountains of S. Malawi.

**Localities:** At the Chitakali Stream, west branch, *Chapman JD & Chapman EG 6892* (FHO, MO). Approach to Cilemba, from the Likabula Valley, *Chapman JD & Chapman EG 7285* (MO). Chapaluka Path, from Likabula, *Hilliard, OM & Burt, B. 4504* (NU).

***Sarcostemma viminalis* (L.) R.Br.**

Straggling shrub or woody climber, with succulent, trailing stems. Sepals yellowish-green, petals white with maroon blush at the centre, continuing as a stripe. Height of the central

gynostegium not exceeding its diameter. Follicles up to 17 cm long.

**Flowering:** June. **Fruiting:** June. **Habitat:** Rocky woodland above the river. **Altitude:** c. 1300 m. **Distribution:** Widespread in Africa.

**Localities:** Western slopes of Mchese Mt., Chanda-Mwani Gorge, *Chapman JD & Chapman EG 8583* (FHO).

***Secamone alpinii* Schult.**

Woody climber, at times reaching the tall canopy. Copious white latex. Flowers small, greenish-cream. Fruits paired, greyish, thinly woody, follicles, each up to 10 cm long. Splitting longitudinally to release seeds and silky hairs.

**Flowering:** November-December. **Fruiting:** July-September. **Habitat:** Forest and forest edge. **Altitude:** 1300-2000 m. **Distribution:** From Kenya and Uganda to South Africa (Western Cape).

**Localities:** Lichenya Plateau, near the C.C.A.P. hut, *Chapman JD & Chapman EG 8257* (FHO). Lichenya Plateau, close to the forestry cottage, *Chapman JD & Chapman EG 8499* (FHO). Western slopes of Mchese Mt., in the Napolo valley, *Chapman JD & Chapman EG 8704* (FHO). Above Chisambo, along the Muluzi Stream, *Chapman JD & Chapman EG 9269* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9436* (FHO).

***Stathmostelma spectabile* (N.E.Br.) Schltr.**

ssp. *spectabile*

Robust, single-stemmed, perennial herb, up to 1 m high, arising from a stout, vertical tuber. Leaves thin and softly hairy. Flowers bright red with yellow stamens, sepals linear.

**Flowering:** December. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Sporadic. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 9479* (FHO).

***Tacazzea conferta* N.E.Br.**

Scandent or climbing shrub. Stipules form a reflexed, toothed frill. Flowers white or pale green.

**Flowering:** June. **Habitat:** Forest edge. **Altitude:** c. 1900 m. **Distribution:** Widespread in tropical Africa and South Africa. **Localities:** Lichenya Plateau, *Richards HM 16619* (K).

***Trachycalymma cristatum* (Decne.) Bullock**

Syn. *Gomphocarpus cristatus* Decne.

Perennial, unbranched herb with annual stems. Densely pubescent. Leaves sessile, linear to lanceolate. Inflorescence of 4-10 flowers in a nodding umbel. Calyx purple, corolla white or greenish.

**Flowering:** January, June, October. **Habitat:** Montane grassland, often in gritty soil by pathside. **Distribution:** Widely scattered in tropical Africa, from Nigeria and Uganda in the north to Angola and Zimbabwe in the south.



**Localities:** Chambe path, *Hilliard OM & Burt BL 4588* (K). Lichenya Plateau, *Moriarty A 688* (K). Lichenya Plateau, above the forestry hut, *Richards HM 16604* (K).

ASPARAGACEAE  
(previously in Liliaceae)  
Refs. Jessop, 1966; Obermeyer, 1983; Obermeyer & Immelman, 1992.

***Protasparagus krebsianus*** (Kunth) Oberm.  
Syn. *Asparagus krebsianus* (Kunth) Jessop  
Shrub with tall, thorny, arching stems, up to 3 m high. Forming clumps. Fruits red.

**Fruiting:** May. **Habitat:** Grows between rocks on open hill-sides. **Altitude:** 1300-1600 m. **Occurrence:** Sporadic. **Distribution:** C. & S. Malawi and South Africa (Transvaal, E. Cape).  
**Localities:** Mchese Mt., on the ridge delimiting the Nahambi Gorge on the south, *Chapman JD & Chapman EG 8836* (FHO). Mchese Mt., Nandiwo valley, *Chapman JD & Chapman EG 9085* (FHO).

***Protasparagus racemosus*** (Willd.) Oberm.  
Syn. *Asparagus racemosus* Willd.  
Shrub with a single, thorny, sprawling or arching stem, up to 2.5 m long. Numerous short, horizontal side branches. Profusion of creamy-white flowers.

**Flowering:** May. **Fruiting:** May. **Habitat:** *Brachystegia* woodland, shrubberies or tall grass and bracken. **Altitude:** 1250-1400 m. **Distribution:** East Africa to South Africa (as far as the southern Cape).  
**Localities:** Likulezi valley, *Chapman JD & Chapman EG 7519* (FHO). Likabula Valley, on the skyline path to Chambe plateau, *Chapman JD & Chapman EG 7555* (FHO). Likabula Valley, along the Lichenya path, *Chapman JD & Chapman EG 8533* (FHO).

***Protasparagus setaceus*** (Kunth) Oberm.  
Syn. *Asparagus setaceus* (Kunth) Jessop; *A. plumosus* Baker  
Slender-stemmed, woody climber/scrambler. Small, fine feathery leaves. Flowers small, pale cream.

**Flowering:** December-April. **Fruiting:** August. **Habitat:** Forest understorey, forest edges and secondary forest. **Altitude:** 850-1900 m. **Distribution:** Malawi, E. Mozambique, Zimbabwe, S. Botswana, South Africa (Transvaal, Orange Free State, KwaZulu-Natal & Cape) and Swaziland. **Localities:** Lower part of the Mulosa ('Crater') Gorge, above Lauderdale, *Chapman JD 6531* (FHO). Linji (Lichenya) Plateau, at the top of the Boma Path, *Chapman JD & Chapman EG 6976* (FHO). Likabula Valley, near Nasato Stream source, *Chapman JD & Chapman EG 7455* (FHO). Fort Lister forestry office to Sombani Plateau, *Chapman JD & Chapman EG 8753* (FHO).

***Protasparagus virgatus*** (Baker) Oberm.  
Syn. *Asparagus virgatus* Baker  
Erect sub-shrub, up to 90 cm high. Wiry stem and branches.

**Fruiting:** November. **Habitat:** Miombo woodland and miombo regrowth in young Pine Plantation. **Altitude:** c. 850 m. **Occurrence:** Locally common. **Distribution:** Malawi, Mozambique, Zimbabwe, E. South Africa, Swaziland, N. Namibia and Angola.  
**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8961* (FHO).

ASPHODELACEAE  
(previously in Liliaceae)  
Refs. Blackmore, 1980, 1981; Kativu 1996, 2001; Marais, 1973.

***Kniphofia monticola*** S.Blackmore  
Clump forming herb, 1.2-1.5 m high when flowering. Leaves broad, linear-lanceolate. Bracts brown. Flowers red in bud, becoming yellow.

**Flowering:** February, but the extent of flowering time not known. **Fruiting:** June-July. **Habitat:** Deep, boggy, peaty soils beneath a broken canopy of *Erica benguelensis* (Ericaceae). **Altitude:** c. 2900 m. **Occurrence:** Very local. **Distribution:** Endemic to Mt. Mulanje, Malawi. **Comments:** Kativu (2001) places this species in the *Kniphofia splendida* complex, until additional material is available.  
**Localities:** Sapitwa, below the summit, *Blackmore S 874* (BM). Near summit of Sapitwa Peak, *Blackmore S 1119* (BM).

***Kniphofia mulanjeana*** S. Blackmore  
Herb, up to 40 cm high, with basal, linear-lanceolate leaves. Flowers orange-red in bud, becoming yellow.

**Flowering:** February-March. **Habitat:** On steep ledges or in shallow pockets of peaty soil on and among boulders on exposed mountainsides. **Altitude:** c. 3000 m. **Occurrence:** Very sporadic and local. **Distribution:** Endemic to Mt. Mulanje. **Comments:** The plants appear to die back completely at the beginning of the dry season (May-June).  
**Localities:** Sapitwa, north-west side below the summit, *Blackmore S et al. 408* (BM). Inner face of Chambe peak, *Chapman JD 554* (K).

***Kniphofia splendida*** E.A.Bruce  
Clump-forming herb, up to 2.5 m high when flowering. Leaves linear-lanceolate. Bracts white. Flowers orange-red in bud, becoming yellow.

**Flowering:** February-June. **Habitat:** Unburnt, montane grassland and *Brachystegia* woodland. **Altitude:** 1600-2100 m. **Occurrence:** Locally common. **Distribution:** S. Malawi, E. Zimbabwe, South Africa (E. Transvaal) and Swaziland.  
**Localities:** Chambe, *Chapman JD 633* (FHO). Lichenya Plateau, *Chapman JD 5664* (FHO). Likabula Valley, on the Chambe path, *Chapman JD & Chapman EG 9061* (FHO). Lichenya (Synod cottage), path from Likabula, *Chapman JD & Chapman EG 9071* (FHO). Chambe Plateau, *Newman EI & Whitmore TC 686* (BM).



## ASTERACEAE

### (Compositae)

*Refs.* Beentje 2000; Burt, 1986; Davies, 1979; Grau & Lippert, 1980; Hilliard, 1977, 1983; Jeffrey 1986, 1990; King & Robinson, 1970; Moore, 1906; Nordlindh, 1975; Pope, 1975, 1988; Roessler, 1975; Wild, 1967, 1968-69, 1972, 1975, 1978, 1980, 1983; Wild & Pope, 1977, 1978.

### *Ageratum conyzoides* L.

**Herb**, up to 1 m high. Capitula pale mauve-blue.

**Flowering:** July, August, September. **Habitat:** Forest, Pine Plantation, cultivated plots. **Altitude:** 1000-1700 m.

**Distribution:** Widespread in the tropics and subtropics.

**Comments:** Common weed of cultivation.

**Localities:** Ruo Gorge, by power station, *Blackmore S et al.* 1520 (FHO). Chambe Plateau, *Chapman JD* 573 (FHO).

### *Anisopappus kirkii* (Oliv.) Brenan

*Syn. Anisopappus flexuosus* (Hutch.) Brenan

**Shrub**, up to 3-4 m high. Leaves deeply serrated, viscid, aromatic. Capitula yellow, ray and disk florets present.

**Flowering:** July-February. **Habitat:** Shrubberies in montane grassland, forest edges, forest regrowth, farm fallow. **Altitude:** 900-2100 m. **Occurrence:** Locally common. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Sombani, *Chapman JD* 397 (FHO, K). Mchese Mt., *Chapman JD* 736 (K). Crater Gorge, Little Mulosa River, *Chapman JD* 6630 (FHO). Linji (Lichenya) Plateau at the old airstrip, *Chapman JD & Chapman EG* 6980 (E). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG* 8031 (FHO). Chisongeli forest, Muluzi Valley, *Chapman JD & Chapman EG* 9299 (FHO).

### *Anisopappus lastii* (O.Hoffm.) Wild ssp. *lastii*

Annual, slender, regularly-branched **herb**, up to 50 cm high. Leaves, petiolate, deltate to ovate, membranous. Ray florets bright yellow, disc florets dull yellow. Some plants radiate and some eradiate.

**Flowering:** April-May. **Habitat:** *Brachystegia* woodland; in shallow soil along paths in montane grassland; among moss on seepage rocks. **Altitude:** 900-2400 m. **Occurrence:** Locally abundant. **Distribution:** Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likulezi Valley, *Chapman JD & Chapman EG* 7632 (E). Likabula Valley, *Chapman JD & Chapman EG* 9029 (FHO). Lichenya Plateau to the Chambe Saddle, *Chapman JD & Chapman EG* 9064 (FHO). Sombani, lower slopes of Namisili, *Chapman JD & Patel IH* 5703 (FHO).

### *Aspilia kotschyi* (Sch.Bip.) Oliv. var. *kotschyi*

Annual **herb**, up to 80 cm high. Long, thin, yellowish, hairy stems. Branches opposite. Stems and leaves rough. Capitula small, dark reddish-brown.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Distribution:** Throughout tropical Africa. **Comments:** Often a weed.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG* 9022 (FHO).

### *Aspilia mossambicensis* (Oliv.) Wild

Spreading, open **shrub** or perennial herb, up to 1.5 m high, with thin, opposite branches. Capitula yellow, bracts acuminate.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Locally common.

**Distribution:** Ethiopia, through East Africa, D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Likabula Valley, *Chapman JD & Chapman EG* 9028 (FHO).

### *Aster milanjanus* S.Moore

**Herb**, up to about 30 cm high. Leaves linear, slightly inrolled at the margin, scabrid, at the base of the stem. Pale mauve ray florets, yellow disc florets.

**Flowering:** July-January. **Habitat:** Montane grassland. **Altitude:** 1800-2300 m. **Occurrence:** Locally fairly common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Chambe Basin. *Hilliard OM & Burt BL* 4582 (K). Lichenya to Chambe Plateau, *Pawek J* 3848 (K). Head of the Ruo Valley, on the approach to Chinzama hut from Sombani, *Strugnell AM et al.* 80 (FHO).

### *Athrixia rosmarinifolia* (Sch.Bip. ex Walp.) Oliv. & Hiern

Woody **perennial**, up to about 1 m high, from a woody rootstock. Small, linear leaves, inrolled at margins, white, woolly hairs on lower surface. Capitula pale mauve.

**Flowering:** August-September. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Occurrence:** Sporadic. **Distribution:** Ethiopia and Sudan to Zimbabwe.

**Localities:** Sombani Plateau, lower slopes of Namisili Peak, *Chapman JD & Chapman EG* 8759 (FHO).

### *Berkheya johnstoniana* Britten

**Herb**, up to 90 cm high when flowering, from a stout, woody creeping rootstock. Leaves deeply serrated, spine-like bristles on upper surface and margins, white felted-tomentose on lower surface. Capitula yellow.

**Flowering:** August-December. **Habitat:** Fire traces and bare patches in montane grassland. **Altitude:** 1950-2100 m. **Occurrence:** Locally common to abundant. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Linji (Lichenya) Plateau near the C.C.A.P. cottage, *Chapman JD & Chapman EG* 6983 (FHO). Path from Lichenya Plateau to Chambe (The Saddle), *Strugnell AM* 34a (FHO).

**Berkheya zeyheri** (Sond. & Harv.) Oliv. & Hiern  
Perennial **herb**, up to 90 cm high from a woody rootstock. Leaves sessile, linear, inrolled at



margin, lower surface white-tomentose except on midrib. Capitula solitary, ray and disk florets yellow.

**Flowering:** October-November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 950 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Swaziland and South Africa (Transvaal, KwaZulu-Natal). **Comments:** Characteristic plant early in the rains, in *Brachystegia* woodland.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9424* (FHO).

***Bidens biternata* (Lour.) Merr. & Sherff**

Herb, up to 1.25 m high. Leaves pinnate with deeply serrated margins, petiolate. Capitula yellow.

**Fructing:** April. **Habitat:** Along old road line in *Brachystegia* woodland. **Altitude:** c. 1300 m. **Occurrence:** Locally common. **Distribution:** Throughout Africa, from South Africa (Transvaal, KwaZulu-Natal) and Namibia to Kenya and tropical West Africa.

**Localities:** Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 9053* (FHO).

***Bidens pilosa* L.**

Erect annual herb, up to 50 cm high. Leaves pinnate, mostly trifoliate. Ray florets white and rounded, disk florets yellow.

**Flowering:** August, but probably much of the year round. **Habitat:** Paths and disturbed ground. **Altitude:** c. 1800 m. **Occurrence:** Common. **Distribution:** Widespread in tropical and subtropical Africa. **Comments:** A common weed of cultivation in highland areas.

**Localities:** Lichenya Plateau, *Strugnell AM & Salubeni AJ 32* (FHO).

***Bidens pinnatipartita* (O.Hoffm.) Wild**

Syn. *Coreopsis pinnatipartita* O.Hoffm.

Shrubby perennial, up to 4 m high. Ray florets yellow, large and showy; disk florets yellow.

**Flowering:** April-July. **Habitat:** Forest edges, forest regrowths, shrubberies in montane grassland. **Altitude:** 2000-2200 m. **Occurrence:** Locally common. **Distribution:** Kenya to Malawi and N.E. Zambia.

**Localities:** Thuchila Plateau, *Chapman JD 5671* (FHO). Descent to the Knife-Edge from Thuchila Shelf, *Chapman JD & Chapman EG 7626* (FHO).

***Bidens steppia* (Steetz) Sherff**

Much-branched annual herb, from about 50 cm to 1.75 m high. Deeply divided leaves, sessile or subsessile on upper part of the plant. Ray florets yellow, large and showy; disk florets yellow.

**Flowering:** March-May. **Habitat:** *Brachystegia* woodland, near streams. **Altitude:** c. 1000 m. **Distribution:** D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9010* (FHO).

***Blumea brevipes* (Oliv. & Hiern) Wild**

Syn. *Laggera brevipes* Oliv. & Hiern

Erect, single-stemmed herb, up to 50 cm high. Leaves viscid, oblong-ovate, decurrent on the stem to give the appearance of wings. Capitula purple.

**Altitude:** c. 1500 m. **Distribution:** Kenya to Zimbabwe and Angola.

**Localities:** Approach to the Chiphalombe Shelf, *Chapman JD & Chapman EG 7855* (K).

***Bothriocline longipes* (Oliv. & Hiern) N.E.Br.**

Syn. *Bothriocline eupatorioides* (Hutch. & Burt) Wild & G.V.Pope; *B. tomentosa* (Oliv. & Hiern) Wild & G.V.Pope

Bushy perennial, up to 2.5 m high. Leaves lanceolate, abruptly narrowing into the petiole. Young stems and underside of leaves hairy. Capitula pale blue-mauve.

**Flowering:** July. **Habitat:** Edge of shrubberies and forests. **Altitude:** c. 1900 m. **Distribution:** Sudan, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi and Angola.

**Localities:** Near Thuchila Cottage, *Jackson G 1978* (FHO).

***Bothriocline milanjiensis* (S.Moore) Wild & G.V.Pope**

Syn. *Erlangea milanjiensis* S.Moore

Bushy herb or shrub, up to 4 m high. Leaves narrowly elliptic, narrowly tapering into the very short petiole, serrate margins. Capitula small, clustered into groups. Florets mauve, fading to almost white.

**Flowering:** May-September. **Habitat:** Forest edges, montane grassland amongst rocks, shrubs and tussock grass. **Altitude:** 1800-2400 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Chambe Peak, *Chapman JD 383* (FHO). Thuchila Shelf, *Chapman JD & Chapman EG 7793* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7954* (MO). Approaching Litakala Peak, from Sombani, *Chapman JD & Chapman EG 8792* (FHO).

***Chrysanthemoides monilifera* (L.) Norlindh**

Shrub, up to 2 m high. Leaves broad-elliptic, spiny-dentate at the margins. Capitula yellow.

**Flowering:** July-February. **Fructing:** August. **Habitat:** Amongst rocks in montane grassland. **Altitude:** 1800-2000 m. **Occurrence:** Scattered. **Distribution:** From Kenya to the Cape in South Africa.

**Localities:** Likabula-Lichenya path, *Chapman JD 525* (FHO). Likabula Valley, Lichenya path below the Saddle, *Chapman JD 5871* (FHO). Lichenya Path, near the Munye Munye Stream, *Chapman JD & Chapman EG 8037* (K).

***Cineraria buchanani* S.Moore**

Scrambling herb, up to 2 m high. Leaves heart-shaped, very toothed margin. Capitula bright yellow.



**Flowering:** August-September. **Habitat:** Forest edges and pathsides, shrubberies, farm fallows. **Altitude:** 1800-2000 m. **Occurrence:** Locally common. **Distribution:** Malawi. **Comments:** Similar to *Cineraria deltoidea* Sond., which is found in South Africa.

**Localities:** Lichenya Plateau, *Chapman JD 5859* (FHO). Likulezi Ng'ono path to Thuchila Shelf, *Chapman JD & Chapman EG 7787* (K). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 8024* (K). Chisongeli Forest below Manene extension, *Chapman JD & Chapman EG 9309* (FHO).

### *Conyza attenuata* DC.

Erect annual or biennial herb, up to 2 m high, stems becoming woody at the base. Leaves sessile, narrowly elliptic or lanceolate. Capitula numerous. Florets yellow.

**Habitat:** Streambanks in forest. **Distribution:** Widespread in tropical Africa; South Africa (E. Transvaal, KwaZulu-Natal) and Swaziland.

**Localities:** Lunguni Stream, *Banda EA & Kaunda K 2657A* (K). Nansinga Stream, *Banda EA & Kaunda K 2664* (K).

### *Conyza gouanii* (L.) Willd.

Erect, perennial herb, up to 60 cm high. Stems densely pilose, often purplish. Leaves cauline, elliptic, pseudopetiolate (sometimes very narrowly winged). Florets yellow.

**Habitat:** Forest floor among moss. **Distribution:** West Africa, Ethiopia, East Africa, Malawi, Zimbabwe, South Africa (E. Transvaal, KwaZulu-Natal) and Swaziland.

**Localities:** In valley below Lichenya cottage, *Chapman JD 405* (BM).

### *Conyza pyrrhopappa* Sch.Bip. ex A.Rich. ssp. *pyrrhopappa*

Coarse, erect, aromatic perennial herb. Leaves sublanceolate, tapering to a short pseudopetiole. Capitula numerous in dense cymes. Capitula yellow (ray florets sometimes pale yellow or white).

**Habitat:** Besides paths and where the grass cover has been disturbed. **Distribution:** Nigeria, Cameroon, Ethiopia, Sudan, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi and Angola.

**Localities:** Chambe Plateau, *Chapman JD H/576* (BM).

### *Conyza subcaposa* O.Hoffm.

Erect, perennial herb. Leaves in a basal rosette, sessile or pseudopetiolate. Capitula solitary or in groups of 2-5. Bracts green or purple-edged. Capitula yellow.

**Habitat:** Montane grassland. **Altitude:** c. 1950 m. **Distribution:** Ethiopia, Sudan, D.R. Congo, Uganda, Kenya, Tanzania, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Little Ruu Plateau, *Newman EI & Whitmore TC 472* (BM).

*Crassocephalum crepidioides* (Benth.) S.Moore  
Erect annual herb. Capitula orange to brick-red, in drooping clusters of heads.

**Flowering:** May-June. **Habitat:** Evergreen forest, among long grass at edge of fire-break. **Altitude:** c. 1950 m. **Distribution:** Widespread in the warmer parts of Africa.

**Localities:** Lichenya path between the Likabula and Satwe Rivers, *Pope G et al. 2261* (K). Lichenya Plateau, *Richards HM 16621* (K).

### *Crassocephalum montuosum* (S.Moore) Milne-Redh.

Robust herb, up to 3 m high. Florets pale yellow, in tight terminal clusters of capitula.

**Flowering:** September. **Habitat:** Forest margins and farm fallows. **Altitude:** 1300-1550 m. **Occurrence:** Locally common. **Distribution:** Widespread in tropical Africa.

**Localities:** Above the Mulosa Pine Plantation, *Chapman JD & Chapman EG 8863* (FHO). Chisongeli Forest, below Manene extension, *Chapman JD & Chapman EG 9302* (FHO).

### *Crassocephalum rubens* (Juss. ex Jacq.) S.Moore Annual herb, up to 1 m high. Pinnatifid leaves. Capitula purple.

**Flowering:** April. **Habitat:** *Brachystegia* woodland, often on disturbed ground such as fire breaks. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** West Africa and from Ethiopia through East and Central Africa to South Africa (KwaZulu-Natal).

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9033* (FHO).

### *Crepis newii* Oliv. & Hiern

Perennial herb, up to 60 cm high. Leafless stem emerging from a rosette of oblanceolate leaves with obtuse apices, bearing a corymb of small heads. Capitula yellow.

**Flowering:** October. **Habitat:** Open *Brachystegia* woodland amongst bracken and *Hyparrhenia*. **Altitude:** c. 1200 m. **Occurrence:** Fairly common. **Distribution:** D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Malawi, N. Mozambique and E. Zimbabwe.

**Localities:** Likabula Valley, *Greenway PJ 6336* (K).

### *Dichrocephala chrysanthemifolia* (Blume) DC. Straggling, annual herb up to 1.6 m. Leaves broadly auriculate at the base. Capitula greenish above, pinkish below with purple, exserted styles.

**Habitat:** High altitude and high rainfall areas. **Altitude:** c. 2000 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Mt. Mulanje, *Wild H 6188* (SRGH).

### *Dichrocephala integrifolia* (L. f.) Kuntze

Erect, pubescent herb with rhomboid-ovate leaves sometimes pinnate at the base. Florets reddish, in terminal, conical heads.

**Habitat:** Evergreen forest clearings and forest edge. **Altitude:** c. 1800 m. **Distribution:** Widespread in tropical and subtropical Africa. **Comments:** A weed.

**Localities:** Lichenya Plateau, *Lupton FG 130* (BM).



***Dicoma elliptica* G.V.Pope**

Erect herb, up to 60 cm high. Lanceolate leaves, mid-green above, white felted below, margin slightly inrolled. Florets pale yellow, surrounded by an involucre of pale green, stiff, pointed bracts.

**Flowering:** July. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Scattered. **Distribution:** D.R. Congo, Zambia, Malawi and Mozambique.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9216* (FHO).

***Galinsoga parviflora* Cav.**

Erect or straggling, annual herb. Glabrous or slightly hairy stems and leaves. White florets.

**Habitat:** Secondary forest regrowth, cultivated plots. **Altitude:** c. 1500 m. **Occurrence:** Common. **Distribution:** Tropical and subtropical Africa. **Comments:** Native to South America. A common weed of cultivated or disturbed land in moist uplands.

**Localities:** Lichenya Plateau, *Chapman JD 415* (BM). Thuchila Plateau, *Newman EI & Whitmore TC 185* (BM).

***Gerbera ambigua* (Cass.) Sch.Bip.**

Perennial herb, up to 20 cm high when flowering. Flowering stem appearing before the leaves. Leaves usually petiolate, white to lemon-yellow tomentose on lower surface. Ray and disk florets bright yellow.

**Flowering:** September-December. **Habitat:** On annually burnt montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Swaziland, South Africa, Lesotho and Angola. **Comments:** In the *Flora Zambesiaca* area this species is distinct from *Gerbera viridifolia* but O.M. Hilliard was unable to separate them in South Africa (Hilliard 1977).

**Localities:** C.C.A.P. cottage, Lichenya Plateau, *Chapman JD & Chapman EG 8201* (MO).

***Gerbera piloselloides* (L.) Cass.**

Perennial herb, up to 50 cm when flowering, growing from a woody rootstock. Flowering stem solitary, brown pilose, widening below the capitulum, appearing with the young leaves. Ray florets white above, red on lower surface, disk florets creamy-white.

**Flowering:** September. **Habitat:** Burnt montane grassland. **Altitude:** c. 2000 m. **Distribution:** Cameroon to Ethiopia and Somalia, southwards to South Africa, Lesotho and Angola.

**Localities:** Little Ruo Plateau, *Newman EI & Whitmore TC 471* (BM). Path towards Sombani from Ruo Basin, below Chinzama Peak, *Strugnell AM 102* (FHO).

***Gerbera viridifolia* (DC.) Sch.Bip.**

Perennial herb, up to 45 cm high when flowering. Flowering stem tomentose, slender, not widening

at the top, often appearing before the leaves. Ray florets white on upper surface, pink on the lower surface; disk florets whitish.

**Flowering:** August. **Habitat:** Burnt montane grassland. **Altitude:** c. 1200 m. **Occurrence:** Sporadic. **Distribution:** Cameroon to Ethiopia, southwards to South Africa, Lesotho and Swaziland.

**Localities:** Sombani path, above Fort Lister forestry office, *Chapman JD & Chapman EG 8782* (FHO, MO).

***Gutenbergia cordifolia* Benth. ex Oliv.**

var. *marginata* (O.Hoffm.) C.Jeffrey

Syn. *Gutenbergia marginata* (O.Hoffm.) Wild & G.V.Pope; *Erlangea marginata* (Oliv. & Hiern) S.Moore

Shrubby, perennial herb, up to 1.5 m high. Leaves alternate, ovate, mid-dark green above, thinly white-felted below. Capitula numerous, florets purple, bracts with pale margins.

**Flowering:** July-August. **Habitat:** Moist, shady forest margins, disturbed ground. **Altitude:** 1300-1950 m. **Distribution:** D.R. Congo, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Thuchila Shelf, *Chapman JD & Chapman EG 7797* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9238* (FHO).

***Gynura valeriana* Oliv.**

Erect herb with deeply pinnatifid leaves. Loose terminal inflorescence of orange capitula.

**Flowering:** January. **Habitat:** Evergreen forest. **Altitude:** c. 1200 m. **Distribution:** Kenya, Tanzania, Malawi (Mt. Mulanje only). **Comment:** Only known on Mt. Mulanje. **Localities:** Halfway up Little Ruo path, *Brummitt RK 12344* (K, MAL).

***Helichrysum brassii* Brenan var. *brassii***

Semi-prostrate, mat-forming herb, up to 40 cm high. Leaves greyish-blue, short glandular hairs on upper surface, white hairs on the lower surface. Florets yellow, bracts black-tipped.

**Flowering:** April-September. **Habitat:** Montane grassland on fire breaks, bare patches of soil and along paths. **Altitude:** c. 2000 m. **Distribution:** S. Malawi and Mozambique.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 9068* (FHO).

***Helichrysum buchananii* Engl.**

Weak-stemmed herb, up to 60 cm or more high, forming clumps. Leaves sessile, grey, soft and downy on both surfaces. Bracts pale yellow, disc florets darker yellow.

**Flowering:** May-September. **Habitat:** Montane grassland, especially near the paths. **Altitude:** 1800-2150 m. **Occurrence:** Locally abundant. **Distribution:** Tanzania and Malawi.

**Localities:** Thuchila Shelf, *Chapman JD & Chapman EG 7796* (FHO). Lichenya Plateau, near site of the old Boma hut, *Chapman JD & Chapman EG 8513* (FHO). Chinzama to Sombani, *Chapman JD & Patel IH 5790* (FHO).



***Helichrysum bullulatum* S.Moore**

Straggling, sub-shrub, up to about 1 m high. Stems and the under surface of the leaves felted-tomentose. Upper leaf surface bullate and slightly hairy. Flowering heads dense. Florets yellowish-cream or dull yellow.

**Flowering:** May-June. **Habitat:** Forest edges and grassy, rocky hillsides. **Altitude:** c. 2000 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Near top of path from Fort Lister Gap to Sombani Basin, *Brummitt RK 11299* (K). Spur on east side of Phalombe Gorge, *Chapman JD 626* (FHO).

***Helichrysum chrysophorum* S.Moore**

Sprawling sub-shrub, up to about 80 cm high. Whole plant is viscid and aromatic. Base of leaves extend down the stem to give a winged appearance. Under surface of the leaves is woolly-tomentose. Small, mustard-yellow florets in dense heads.

**Flowering:** May. **Habitat:** Forest margins, montane grassland, especially which has not been burnt for some years, amongst bracken and tall herbs. **Altitude:** c. 1800 m. **Occurrence:** Locally abundant. **Distribution:** Malawi, possibly only on Mt. Mulanje.

**Localities:** Chambe Basin, *Chapman JD 5623* (FHO). At saddle connecting the Chambe Basin to main massif, *Chapman JD 5636* (FHO). Lichenya Plateau, *Chapman JD 5651* (FHO).

***Helichrysum densiflorum* Oliv.**

Epiphyte on *Xerophyta splendens* or as a shrub, up to 3.5 m high. Lanceolate, viscid leaves, white-felted underneath. Small, mustard-yellow florets in dense, flat capitula.

**Flowering:** May-September. **Habitat:** Amongst other *Helichrysum* species in scrubby vegetation on the plateaux. **Altitude:** 1950-2300 m. **Occurrence:** Scattered but can be locally common. **Distribution:** Endemic to Mt. Mulanje. **Comments:** Material identified with this species from northern Malawi and Zambia has much larger flowers and appears to be distinct (R.K. Brummitt, pers. comm.).

**Localities:** Top of the Lichenya path, from Likabula, *Chapman JD 5867* (FHO). Thuchila Shelf, *Chapman JD & Chapman EG 7788* (FHO). Chisepu, above the shelter, *Chapman JD & Patel IH 5789* (FHO).

***Helichrysum dichroölepis* Brenan**

Semi-prostrate herb forming mats. Similar to *Helichrysum brassii* var. *brassii* but has no glandular indumentum on the upper surface of the leaves, instead has a cottony indumentum, especially on the younger leaves. The capitula are similar, although the bracts of this species do not seem so dark.

**Flowering:** April. **Habitat:** In shallow soil along paths and between low rocky outcrops in montane grassland. **Altitude:** c. 2000 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Below North Peak, Lichenya Plateau, *Chapman JD & Chapman EG 9062* (FHO).

***Helichrysum dilucidum* S.Moore**

Scrambling shrub, up to 5 m high. Leaves linear, up to 8 cm long or more, widely spaced, pale green. Florets yellow, in many small dense capitula.

**Flowering:** May-August. **Habitat:** Forest edges. **Altitude:** 1800-2150 m. **Occurrence:** Common. Gorge, *Chapman JD & Chapman EG 7955* (FHO). **Distribution:** S. Malawi, possibly only Mt. Mulanje.

**Localities:** Along Lichenya path in the 'pipe', *Chapman JD 606* (FHO). Thuchila Shelf, *Chapman JD 5756* (FHO). Lichenya Plateau, *Chapman JD 5861* (FHO). Phalombe

***Helichrysum foetidum* (L.) Cass.**

var. *microcephalum* A.Rich.

Robust, aromatic semi-shrubby plant. Leaf bases clasp the stem. Leaves white-felted below; sparse, long white hairs on upper surface, becoming almost glabrous. Short, pale yellow, papery bracts surround darker disk florets.

**Flowering:** September. **Habitat:** Forest margins and farm fallows. **Altitude:** c. 1500 m. **Occurrence:** Sporadic. **Distribution:** Cameroon, Sudan, Ethiopia, Somalia, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Zambia and Malawi.

**Localities:** Edge of Chisongeli Forest, *Chapman JD & Chapman EG 9301* (FHO).

***Helichrysum herbaceum* (Andr.) Sw.**

Sub-shrub, up to 50 cm high, forming compact clumps. Leaves small, linear, grey-green, covered in woolly hairs, densely covering the stem. Capitula yellow, with papery bracts and darker disc florets.

**Flowering:** May-September. **Habitat:** Montane grassland. **Altitude:** 1800-2000 m. **Occurrence:** Fairly common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, eastern highlands of Zimbabwe, South Africa (Transvaal, Orange Free State, KwaZulu-Natal, E. and S. Cape) and Lesotho.

**Localities:** Thuchila Shelf, *Chapman JD 5673* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9087* (FHO).

***Helichrysum kirkii* Oliv. & Hiern var. *kirkii***

Syn. *Helichrysum kirkii* Oliv. & Hiern; *Helichrysum milan-jense* Britten

Sub-shrub, up to about 1 m high. Stems reddish-brown. Leaves small, linear, green on upper surface, woolly tomentose on the lower surface, slightly reflexed. Capitula yellow with papery bracts and darker central disk florets.

**Flowering:** May. **Habitat:** *Brachystegia* woodland, grassland. **Altitude:** c. 1050 m. **Occurrence:** Frequent and locally common. **Distribution:** D.R. Congo, Kenya, Tanzania, Zambia, Malawi and Mozambique.



**Localities:** Likulezi Valley, *Chapman JD & Chapman EG 7506* (FHO). Chambe Plateau, at the approach to the Knife-Edge, *Chapman JD & Chapman EG 7620* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8494* (FHO).

***Helichrysum kirkii* Oliv. & Hiern**

var. *petersii* (Oliv. & Hiern) Beentje

Syn. *Helichrysum petersii* Oliv. & Hiern

Weak-stemmed shrub, up to 1 m high. Leaves sessile, lanceolate, mid to dark green. Capitula with papery, yellow bracts.

**Flowering:** May. **Habitat:** Amongst tall *Hyparrhenia*. **Altitude:** c. 1200 m. **Distribution:** D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Mozambique and Angola.

**Localities:** Likulezi Ng'ono Valley, *Chapman JD & Chapman EG 7544* (FHO).

***Helichrysum lastii* Engl.**

Sub-shrub, up to about 50 cm high. Leaves small, linear, reflexed, grey due to dense woolly hairs. Many capitula of densely-packed, mustard-yellow disk florets forming rounded heads.

**Flowering:** May-September. **Habitat:** Montane grassland and amongst bracken and tall herbs. **Altitude:** c. 1800 m. **Occurrence:** Widespread on the plateaux. **Distribution:** Kenya, Malawi and Mozambique.

**Localities:** Chambe Basin, *Chapman JD 5622* (FHO). Lichenya Plateau and widespread on the mountain, *Chapman JD & Chapman EG 8515* (FHO)

***Helichrysum membranaceum* Wild**

Annual, viscid herb, up to 60 cm high, similar to *H. foetidum*. Leaves membranous. Florets yellow.

**Flowering:** June. **Habitat:** *Brachystegia* woodland. **Distribution:** S. Malawi and Zimbabwe.

**Localities:** Chambe, *Robinson EA 5352* (SRGH).

***Helichrysum nitens* Oliv. & Hiern**

Herb, up to 60 cm high when flowering. Leaves and stem fleshy, grey, softly hairy. Leaves large, in a basal rosette. Capitula with lemon-yellow, papery bracts and darker yellow centres.

**Flowering:** May-September. **Habitat:** Regularly burnt montane grassland. **Altitude:** 1050-1900 m. **Occurrence:** Widespread on the plateaux. **Distribution:** D.R. Congo and Tanzania to Mozambique and Angola.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 8196* (MO). Path between Chambe and Thuchila huts, *Hardy S & Maclachlan A 86* (K). Lichenya Plateau, *Strugnell AM 24* (FHO).

***Helichrysum nudifolium* (L.) Less.**

var. *nudifolium*

Syn. *Helichrysum plantaginifolium* Moeser

Herb, up to 90 cm high when flowering. Stems covered with woolly hairs that rub off. Plantain-

like leaves on long petioles at the base of the stem. Capitula of tiny, dull, creamy-yellow florets.

**Flowering:** November. **Habitat:** Open *Brachystegia* woodland. **Altitude:** c. 1150 m. **Distribution:** Sierra Leone and Nigeria to Sudan and Ethiopia, south to South Africa and Angola.

**Localities:** On the Boma Path, *Chapman JD & Chapman EG 6891* (FHO).

***Helichrysum nudifolium* (L.) Less.**

var. *oxyphyllum* (DC.) Beentje

Syn. *Helichrysum oxyphyllum* DC.; *Helichrysum rhodolepis* Baker

Herb with a single flowering stem, up to 80 cm high. Stems and leaves dark grey. Leaves sessile, broadly linear, tapering to a long point. Capitula white with pink bracts.

**Flowering:** December. **Habitat:** *Brachystegia* woodland and wooded grassland. **Altitude:** c. 850 m. **Occurrence:** Fairly common. **Distribution:** Nigeria to Sudan, south to South Africa (Transvaal, KwaZulu-Natal, Cape) and Swaziland.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9430* (FHO).

***Helichrysum nudifolium* (L.) Less.**

var. *pilosellum* (L.f.) Beentje

Syn. *Gnaphalium pilosellum* L.f.; *Helichrysum pilosellum* (L.f.) Less.; *Helichrysum latifolium* (Thunb.) Less.

Herb, up to 15 cm high when flowering, arising from a woody rootstock. Leaves in a basal rosette, broad, rounded at the apex, hairy, darker above, greyish below. Capitula of densely-packed, mustard-yellow florets in a globular head.

**Flowering:** August-September. **Habitat:** Recently burnt montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Scattered. **Distribution:** D.R. Congo, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, Orange Free State, KwaZulu-Natal, Cape), Swaziland and Lesotho.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 8200* (MO). Between Sombani and Ruo Basins, *Strugnell AM 75* (FHO).

***Helichrysum odoratissimum* (L.) Less.**

Semi-scrambling shrub, up to 1.5 m high. Leaves and stems pale grey. Leaves small, lanceolate. Capitula of densely-packed, bright, mustard-yellow florets.

**Flowering:** April-September. **Habitat:** Montane grassland, often at pathsides or among bracken and shrubs, forest edges. **Altitude:** 1700-2100 m. **Occurrence:** Common. **Distribution:** Ethiopia and Sudan to South Africa.

**Localities:** Path from Thuchila Hut to head of Ruo Basin, *Brummitt RK 9768* (K). Lichenya Path, *Chapman JD & Chapman EG 8535* (FHO). Mchese Mt., between the Napolo and Namajani Streams, *Chapman JD & Chapman EG 8689* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8773* (FHO).



***Helichrysum patulifolium* Baker**

Sub-shrub, up to 80 cm high. Stems reddish. leaves dark green. Capitula of deep yellow florets, many clustered into a head.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1050 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania and Malawi.

**Localities:** Likabula Valley, Chapaluka track, *Chapman JD & Chapman EG 7354* (FHO).

***Helichrysum poliodes* B.L.Burt**

Compact, erect, sub-shrub, up to 1.5-2 m high but often much less. Leaves small, spatulate, grey-green, densely clothing the stem. Capitula of mustard-yellow disk florets.

**Flowering:** August-November. **Habitat:** Montane grassland. **Altitude:** 1900-2100 m. **Occurrence:** Sporadic, may be locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Sombani Basin, *Chapman JD & Chapman EG 8774* (FHO). Big Ruu Basin, Minunu, *Chapman JD & Chapman EG 9381* (FHO).

***Helichrysum setosum* Harv.**

Erect, much-branched herb, up to 1 m high. Stem reddish, coarsely hairy. Leaves sessile, lanceolate, pale green. 3-4 capitula at the end of each lateral branch. Yellow papery bracts surround a large, flat centre of disk florets.

**Flowering:** May. **Habitat:** *Brachystegia* woodland, montane grassland, at path sides. **Distribution:** Ethiopia to South Africa.

**Localities:** Sombani, *Chapman JD & Patel IH 5694* (FHO). Skyline path to Chambe, North side of Likabula Gorge, *Pope G et al. 2275* (K).

***Helichrysum sordidum* S.Moore**

Bushy sub-shrub, up to 90 cm high. Leaves small, lanceolate with darker, bullate upper surface. Woolly hairs cover stem and both leaf surfaces. Capitula white with brownish centres, sometimes tinged pink on outside.

**Flowering:** April-May. **Habitat:** Rooting between rocks slabs and outcrops, also on fire break margins. **Altitude:** 2000-2400 m. **Occurrence:** Sporadic to locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Near Lichenya Saddle, *Chapman JD 607* (FHO). Sapitwa, *Chapman JD & Chapman EG 7567* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 9063* (FHO).

***Helichrysum syncephalum* Baker**

Weak-stemmed, straggling shrub, up to 1.5 m high. Stems and leaves woolly. Upper surface of leaves dark, white below. Capitula white, pinkish in bud.

**Flowering:** August-September. **Habitat:** Grassy, rocky slopes with other shrubs and bracken, pathsides. **Altitude:**

1550-2100 m. **Occurrence:** Sporadic. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, *Chapman JD 5864* (FHO). Chambe Shelf, *Chapman JD & Chapman EG 7668* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7943* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8775* (FHO).

***Helichrysum whyteanum* Britten**

Sub-shrub, up to 2 m high but often less. Leaves short and stiff, dark green and shiny above, white woolly-haired below. 2-4 capitula at the apex of each branch with shining, white, papery bracts surrounding a yellow centre.

**Flowering:** May-September. **Habitat:** Montane grassland and rocky slopes. **Altitude:** c. 2000 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Chisepu area, *Chapman JD & Chapman EG 7578* (FHO). Chisepu, where the Sapitwa track leaves the Thuchila-Chambe path, *Chapman JD & Patel IH 5684* (FHO).

***Hypericophyllum compositarum* N.E.Br.**

Herb, up to 1 m high when flowering. Opposite, lanceolate leaves. Orange capitula.

**Flowering:** August-September. **Habitat:** *Brachystegia* woodland. **Occurrence:** Infrequent. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, edge of the skyline path to Chambe, *Strugnell AM & Salubeni AJ 2* (FHO).

***Inula glomerata* Oliv. & Hiern**

Robust, erect, single-stemmed herb, up to about 1.75 m high when flowering. Heads of subsessile capitula, florets mustard-yellow.

**Flowering:** June-July. **Habitat:** Sparsely wooded grassland, amongst tall grass. **Altitude:** c. 1300 m. **Occurrence:** Locally common. **Distribution:** Tanzania to Zimbabwe, the Transvaal in South Africa and Angola.

**Localities:** Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9221* (FHO).

***Lactuca attenuata* Stebbins**

Scrambling herb, up to 2 m high. Milky sap. Florets, c. 5 per capitula, with spreading yellow rays with a purple, central band on the outside.

**Flowering:** August. **Habitat:** Cedar forest, shrub-covered hillside. **Altitude:** 1950-2100 m. **Distribution:** D.R. Congo, Burundi, Rwanda, Uganda and Malawi.

**Localities:** Nayawani Shelf, at top of path to Madzeka Basin, *Brunnmitt RK 12291* (K). Likabula to Lichenya Plateau, *Pawek J 3897* (K).

***Lactuca lasiorhiza* (O.Hoffm.) C.Jeffrey**

Acaulescent, perennial herb, up to about 5 cm high. Large tap root. Milky latex. Leaves appear after flowering. Ray florets deep pink, disk florets yellow.



**Flowering:** August-October. **Habitat:** Montane grassland along paths, also in bare soil after burning. **Altitude:** c. 2100 m. **Occurrence:** Local. **Distribution:** Ghana, Nigeria, Cameroon, Central African Republic, D.R. Congo, Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Sombani Basin, *Chapman JD & Chapman EG 8911* (FHO).

*Lopholaena whyteana* (Britten) Phill. & C.A.Sm.

Many-stemmed, erect sub-shrub up to 75 cm high. Fleshy, rather spathulate leaves. Capitula white, but only a few out at one time.

**Flowering:** August-September. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Crest of the path from Likabula to Lichenya, *Chapman JD 5868* (FHO).

*Melanthera scandens* (Schumach. & Thonn.)

Roberty ssp. *madagascariensis* (Baker) Wild

A branched herb, up to 1 m high. Leaves narrowly oblong-ovate, ± cordate or truncate, usually with basal lobes. Capitula orange-yellow or yellow.

**Habitat:** Damp places near streams. **Distribution:** Ethiopia and Sudan to Botswana and Namibia. Also Madagascar.

**Localities:** Mt. Mulanje (no locality given) *Whyte A. s.n.* (BM).

*Melanthera scandens* (Schumach. & Thonn.)

Roberty ssp. *subsimplificifolia* Wild

Similar to ssp. *madagascariensis* with the following differences: Climber or slender herb. Leaves ovate to broadly ovate, cordate to cuneate at the base but usually without basal lobes.

**Habitat:** Forest or forest edge. **Distribution :** Widespread in tropical Africa.

**Localities:** Mt. Mulanje (no locality given), *Forbes APS 118* (EA).

*Mikania cordata* (Burm.f.) B.L.Rob.

Syn. *Mikania scandens* Willd.

Scrambling shrub or twining vine, up to 15 m high. Cordate leaves. Capitula white.

**Flowering:** July-August. **Habitat:** Forest edge, forest regrowths. **Altitude:** 1000-1950 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Edge of the Chiphalombe Shelf, *Chapman JD & Chapman EG 7862* (FHO). Mchese Mt., at the dambo of the Nantali Stream, *Chapman JD & Chapman EG 8723* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9249* (FHO).

*Nidorella auriculata* DC. ssp. *auriculata*

Coarse, branched herb, up to 90 cm high. Leaves sessile, auricles at the base. Florets golden-yellow, in small capitula.

**Flowering:** May-December. **Habitat:** Unburnt grassland. **Altitude:** c. 2000 m. **Distribution:** D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, KwaZulu-Natal, Cape), Swaziland and Lesotho.

**Localities:** Linji Plateau, *Chapman JD 6073* (FHO). C.C.A.P. cottage, Lichenya Plateau, *Chapman JD & Chapman EG 8202* (MO). Sombani Hut, *Chapman JD & Patel IH 5697* (FHO).

*Nidorella umbrosa* Wild

Robust annual herb, about 1 m high. Stems simple or few-branched from the base. Leaves membranous, auriculate, pseudopetiolate. Capitula yellow; ray florets pale yellow.

**Habitat:** Evergreen cedar forest. **Altitude:** c. 1800 m.

**Distribution:** Possibly confined to Mt. Mulanje.

**Localities:** Thuchila Plateau, *Newman EI & Whitmore TC 101* (BM).

*Senecio auriculatissimus* Britton

Erect or scrambling shrub, up to 5 m high. Leaves slightly fleshy, kidney-shaped and serrated, clasping the stem. Capitula bright yellow.

**Flowering:** July-August. **Habitat:** Streambanks in forest, forest edge, shrubberies in grassland. **Altitude:** c. 1900 m.

**Occurrence:** Frequent, especially in areas not recently burnt.

**Distribution:** S. Malawi, Mozambique and E. Zimbabwe.

**Localities:** Lichenya Plateau, *Chapman JD 5856* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7934* (FHO).

*Senecio latifolius* DC.

Robust, usually single-stemmed herb, up to 80 cm high. Lanceolate leaves clasping the stem. Much-branched inflorescence of yellow capitula.

**Flowering:** December-April. **Habitat:** Short grassland and pathsides. **Altitude:** c. 1800 m. **Occurrence:** Locally abundant. **Distribution:** Zambia and Malawi to South Africa

**Localities:** Lichenya Plateau, near site of the University Cottage, *Chapman JD & Chapman EG 8217* (K, MO). Lichenya Plateau, *Chapman JD & Chapman EG 9454* (FHO, K).

*Senecio maranguensis* O.Hoffm.

Robust, many-stemmed herb or shrub, up to 3 m high. Leaves lanceolate, serrated margin. Foliaceous structures at base of petiole. Large number of small capitula, florets yellow.

**Flowering:** August-September. **Habitat:** Forest edge, shrubberies in grassland among rocks. **Altitude:** c. 2000 m. **Occurrence:** Locally abundant. **Distribution:** Rwanda, Uganda, Kenya to Malawi.

**Localities:** Lichenya Plateau, *Chapman JD 5857* (FHO). C.C.A.P. cottage path, at the Likabula Valley-Lichenya Plateau divide, *Chapman JD & Chapman EG 8014* (FHO). Approaching Litakala Peak, from Sombani Basin, *Chapman JD & Chapman EG 8794* (FHO).



***Senecio milanjanus* S.Moore**

Slightly succulent herb, up to 1 m high. Leaves peltate. Capitula yellow.

**Flowering:** May-August. **Habitat:** Edge of thickets and forest, wet areas in *Brachystegia* woodland, between rocks. **Altitude:** c. 2000 m. **Occurrence:** Locally common. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Chambe Peak, *Chapman JD 5608* (FHO). Lichenya Plateau, *Chapman JD 5872* (FHO). Chinzama, *Chapman JD & Patel IH 5742* (FHO).

***Senecio peltophorus* Brenan**

Succulent herb, up to 20 cm high. Leaves petiolate, grey-mauve on the underside. Capitula yellow.

**Flowering:** May-June. **Habitat:** Mossy, seepage rocks. **Altitude:** c. 2100 m. **Occurrence:** Locally gregarious. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Eastern end of Chambe Plateau, *Goodier R 260* (K). Cilemba Peak, *Richards HM 16578* (K).

***Senecio ruwenzoriensis* S.Moore**

Glabrous, sometimes glaucous herb, up to 75 cm high. Alternate, elliptic, succulent leaves. Capitula yellow, top of the bracts mauve.

**Flowering:** September-January. **Habitat:** Montane grassland, in shallow soil or recently burnt areas. **Altitude:** 1800-2300 m. **Occurrence:** Scattered. **Distribution:** Nigeria, Cameroon, Central African Republic and from Sudan and East Africa southwards to S.W. Cape in South Africa.

**Localities:** Chambe Basin, *Hilliard OM & Burt BL 4581* (K). Head of the Ruvo Valley, on the approach to Chinzama Hut, *Strugnell AM et al. 81* (FHO).

***Senecio syringifolius* O.Hoffm.**

Soft-wooded or slightly succulent climber. Triangular leaves, truncate at base. Capitula pale yellow.

**Flowering:** August. **Habitat:** Forest or forest edge. **Altitude:** 1800-2150 m. **Occurrence:** Infrequent. **Distribution:** Uganda, Kenya, Tanzania and Malawi.

**Localities:** Sombani Basin, at foot of Namasile, *Brummitt RK 11285* (K). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9243* (FHO).

***Senecio whyteanus* Britten**

Perennial herb, up to 1.3 m. Leaves mostly basal, petiolate, lanceolate. Stem leaves few, sessile. Lax inflorescence with few, large capitula. Ray florets yellow.

**Flowering:** January-April. **Habitat:** Montane grassland, often on streambanks. **Altitude:** 1800-2200 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** N.W. slopes of Ruvo basin, *Brummitt RK 9717* (K). Top of the Lichenya path, above the C.C.A.P. Hut, *Brummitt RK & Polhill R 15950* (K). Chambe-Lichenya path, *Hilliard OM & Burt BL 4550* (K).

***Solanecio angulatus* (Vahl) C.Jeffrey**

Syn. *Senecio bojeri* DC.; *Crassocephalum bojeri* (DC.) Robyns

Herbaceous climber, up to 2 m high. Stems blotched with purple. Leaves deeply divided, auriculate. Capitula yellow, the bracts purple.

**Flowering:** April. **Habitat:** *Brachystegia* and transition woodland. **Altitude:** c. 1100 m. **Distribution:** Cameroon, Equatorial Guinea, Gabon, Ethiopia and Somalia south to South Africa (Transvaal, KwaZulu-Natal) and Angola.

**Localities:** Likulezi Valley, *Chapman JD & Chapman EG 7500* (FHO).

***Solanecio mannii* (Hook.f.) C.Jeffrey**

Syn. *Senecio mannii* Hook.f.; *Crassocephalum mannii* (Hook.f.) Milne-Redh.

Soft-wooded, spreading tree, up to 6 m high. Very prominent leaf scars. Leaves lanceolate, serrated margin. Capitula orange-yellow, unpleasant smell.

**Flowering:** July-October. **Habitat:** Forest edges, clearings and regrowths. **Altitude:** 1000-1450 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Likulezi Valley, *Chapman JD 478* (FHO). Mulosa Gorge (to Crater) below Manga Peak, *Chapman JD 6572* (FHO). Approaching Phalombe Gorge, *Chapman JD & Chapman EG 7825* (FHO).

***Sonchus luxurians* (R.E.Fr.) C.Jeffrey**

Scrambling herb, up to 2 m. Leaves glabrous, deeply divided with a pointed clasping base. Capitula yellow.

**Flowering:** April-June. **Habitat:** Forest and forest edges. **Altitude:** c. 2000 m. **Distribution:** Ethiopia, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania and Malawi.

**Localities:** 1km south of Thuchila Hut, *Brummitt RK 9749* (K). Sombani Basin, 2 km above hut, *Brummitt RK 11273* (K).

***Spilanthes mauritiana* DC.**

Annual herb with stems creeping at the base. Leaves petiolate, ovate, sparsely pubescent on both surfaces. Capitula solitary on peduncles, up to 8 cm long. Ray florets pale yellow or almost white; disc florets yellow.

**Flowering:** November **Habitat:** Wet places by streams and in bogs. **Distribution:** Widespread in tropical Africa. and South Africa (Transvaal, KwaZulu-Natal, Cape) and Swaziland.

**Localities:** Mlanje, *Wiehe PO 705*

***Stomatanthes africanus* (Oliv. & Hiern)**

R.M.King & H.Rob.

Syn. *Eupatorium africanum* Oliv. & Hiern

Erect herb, about 60 cm high, from a woody rootstock. Leaves, small, lanceolate-elliptic, dentate in upper sections. Terminal corymb of white capitula.



**Flowering:** October, March. **Habitat:** Annually burnt, montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa, extending to South Africa (Transvaal) and Swaziland. **Localities:** Sombani Basin, *Chapman JD & Chapman EG 8361* (MO). Chambe Plateau, *Vigne C 4883* (FHO).

***Tithonia diversifolia* (Hemsl.) Gray**

Annual, or sometimes perennial, herb, often branching. Stems 4-angled, striate and sometimes woody. Leaves deeply 3-5 lobed. Capitula solitary on peduncles up to 10 cm long. Ray florets large and showy, bright yellow or orange-yellow.

**Flowering:** April. **Habitat:** Weed of roadsides and waste places. **Distribution:** Introduced to tropical Africa. **Comments:** Native of Central America.

**Localities:** *Cronin in GHS 136,400* (SRGH).

***Tolpis capensis* (L.) Sch.Bip.**

Erect perennial herb, up to 80 cm high when flowering. Leaves sub-rosulate. Many capitula, laxly corymbiform. Florets yellow.

**Flowering:** January-June. **Habitat:** Montane grassland. **Altitude:** c. 1950 m. **Distribution:** Eastern Africa from Sudan to South Africa and Madagascar.

**Localities:** 1 km south of Thuchila Hut, *Brummitt RK 9742* (K). Path from Thuchila to Saddle, *Chapman JD H/690* (K). Chambe Basin, *Hilliard OM & Burt BL 4613* (K).

***Vernonia adoensis* Sch.Bip. ex Walp.**

var. *mossambiquensis* (Steetz) G.V.Pope

Semi-woody herb or shrub, up to 3 m high. Leaves densely tomentose below. Big capitula, with broad, green bracts and pinkish-purple florets which fade to white.

**Flowering:** April-May. **Habitat:** Semi-closed *Brachystegia* woodland, rank growth and shrubberies at forest edges. **Altitude:** 1000-1500 m. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, near the Nasato Stream, *Chapman JD & Chapman EG 7383* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 7672* (FHO). Mulosa Valley, *Newman EI & Whitmore TC 565* (BM).

***Vernonia calyculata* S.Moore**

Erect, slender, perennial herb, up to 75 cm high. Stems faintly ribbed, purple at least below. Capitula purple.

**Flowering:** January. **Habitat:** *Brachystegia* woodland. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Angola.

**Localities:** Chambe cableway path, *Hilliard OM & Burt BL 4620* (K).

***Vernonia cinerea* (L.) Less. var. *cinerea***

Erect, annual herb, up to 50 cm high or more. Mid to dark green leaves, paler on the underside.

Lower leaves abruptly tapering into a narrowly-winged petiole. Small capitula carried on thin, much-divided branches. Florets mauve.

**Flowering:** August/September. **Habitat:** Along paths under evergreen forest and in cultivated ground. **Altitude:** c. 900 m and below. **Occurrence:** Fairly common. **Distribution:** Widespread in west tropical Africa, D.R. Congo, Rwanda, Malawi, Mozambique, Zimbabwe, Angola, South Africa (Transvaal). **Comments:** Often a weed of cultivated or disturbed ground.

**Localities:** Big Ruu Valley, *Strugnell AM 51* (FHO).

***Vernonia colorata* (Willd.) Drake**

ssp. *oxyura* (O.Hoffm.) C.Jeffrey

Soft wooded shrub or small tree, up to about 7 m high. Leaf margin undulate. Numerous capitula. Involucre more than 7 mm wide, bracts extend slightly down the capitulum stalk. Capitula white, tinged with purple.

**Flowering:** April-May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Sporadic. **Distribution:** D.R. Congo, Kenya, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Lower slopes, *Chapman JD 355* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7504* (FHO).

***Vernonia erinacea* Wild**

Erect herb, up to 2 m high. Leaves sessile, filiform to linear. Bracts in centre of involucre have long, dark, bristle-like tips. Capitula purple.

**Flowering:** May. **Habitat:** Weed of cultivation. **Altitude:** c. 650 m. **Distribution:** D.R. Congo and Tanzania to South Africa (Transvaal).

**Localities:** Close to the Malawi Tea Factory, *Chapman JD & Chapman EG 7551* (MO).

***Vernonia glaberrima* Welw. ex O.Hoffm.**

Spreading sub-shrub, 1-2 m high. Leaves oblanceolate, usually glabrous. Numerous, small capitula. Florets white.

**Flowering:** January. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1050 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa. **Comments:** New leaves appear with the flowers or just after.

**Localities:** Likabula Valley, Chapaluka Path, *Chapman JD & Chapman EG 7064* (FHO).

***Vernonia holstii* O.Hoffm.**

Straggling shrub, up to 2.5 m high. Lower leaf surface greyish-white tomentose. Capitula pale mauve to dull white.

**Flowering:** February-May. **Habitat:** Understorey of riverine forest. **Altitude:** 800-1250 m. **Occurrence:** Common. **Distribution:** Cameroon, D.R. Congo, Rwanda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Bank of Likabula River, near the forestry depot, *Chapman JD & Chapman EG 7168* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7648* (FHO). Mchese



Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9099* (FHO).

***Vernonia karaguensis* Oliv. & Hiern**

Robust, often single-stemmed herb, up to 1 m high. Numerous, small capitula with purple florets and purple-tipped bracts.

**Flowering:** May-July. **Habitat:** *Brachystegia* woodland, grassland and shrubberies. **Altitude:** 1000-2000 m. **Occurrence:** Common but scattered. **Distribution:** Nigeria, Sudan, Ethiopia, D.R. Congo, Rwanda, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Lichenya path, Bwaibwai Stream, *Chapman JD & Chapman EG 8536* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9215* (FHO). Chambe Plateau, *Chapman JD & Chapman EG 9541* (FHO).

***Vernonia melleri* Oliv. & Hiern**

var. *superba* (O.Hoffm.) C.Jeffrey

Perennial herb, up to 1 m high. 1-4 mid-blue capitula per plant.

**Flowering:** May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Above Likabula Forestry House, on roadside to Chambe Plateau, *Christenson GM & Patel IH 1566* (K)

***Vernonia melleri* Oliv. & Hiern var. *melleri***

Erect herb, up to 1 m high. 4-21 mid-blue capitula per plant.

**Flowering:** May-June. **Habitat:** *Brachystegia* woodland, riparian forest. **Altitude:** 900-1550 m. **Occurrence:** Occasional to common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Angola.

**Localities:** Mchese Mt., Namiziva valley, *Chapman JD H/665* (K). Likabula Valley, *Chapman JD H/655* (K). Above Likabula Forestry House, on roadside to Chambe Plateau, *Christenson GM & Patel IH 1565* (K).

***Vernonia milanjianana* S.Moore**

Slender herb, up to 40 cm high when flowering. Woody rootstock. Basal leaves. Florets pale purple.

**Flowering:** November-April. **Habitat:** Open hillside and moist but well-drained, peaty soil in grassland. **Altitude:** 1900-2200 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Ruw Basin, *Brummitt RK 9704* (K). Lichenya Plateau, on central fire trace, *Chapman JD & Chapman EG 8205* (K).

***Vernonia musofensis* S.Moore var. *musofensis***

Slender, perennial herb, up to 50 cm high. Stems hispid-tomentose. Capitula blue, with white centre.

**Flowering:** April. **Habitat:** Grassy fallow. **Altitude:** c. 1000 m. **Occurrence:** Occasional. **Distribution:** D.R. Congo, Zambia and Malawi.

**Localities:** West slopes near Mozambique border, *Christenson GM & Patel IH 1459* (K).

***Vernonia myriantha* Hook.f.**

Soft, brittle-wooded shrub or small tree, up to 7 m high. Leaves lanceolate, serrate margins. Suborbicular, stipule-like structures at base of petiole. Capitula mauve-white.

**Flowering:** August-November. **Habitat:** Margins of stream-fringing forest. **Altitude:** 800-1100 m. **Distribution:** Widespread in tropical Africa, also in South Africa (Transvaal, KwaZulu-Natal).

**Localities:** F.R. boundary with Chitakali, *Chapman JD & Chapman EG 6810* (FHO). Esperanza, *Chapman JD & Chapman EG 7998* (FHO). Chisongole Forest, *Newman EI & Whitmore TC 586* (BM).

***Vernonia petersii* Oliv. & Hiern**

Robust, much-branched, annual herb, up to 1 m high but usually less. Numerous capitula, florets purple.

**Flowering:** June. **Habitat:** Weed of cultivated ground. **Altitude:** c. 800 m. **Occurrence:** Common. **Distribution:** Widespread from S.E. Tanzania and D.R. Congo southwards to Zimbabwe, Namibia and Angola.

**Localities:** Below Chambe Peak, *Chapman JD & Chapman EG 7754* (K, MO).

***Vernonia pteropoda* Oliv. & Hiern**

Soft-wooded shrub, up to about 2 m high. Numerous capitula. Bracts papery, white with a green central stripe. Capitula white.

**Flowering:** July-September. **Habitat:** Forest understorey. **Altitude:** 900-1950 m. **Occurrence:** Locally common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Little Mulosa River, low down in the Crater, *Chapman JD & Chapman EG 8009* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8022* (MO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8717* (FHO). Mchese Mt., Nthambi Stream above Misomali, *Chapman JD & Chapman EG 8832* (FHO). Muluzi Valley, Chisongeli forest, *Chapman JD & Chapman EG 9282* (FHO). Thuchila Plateau, *Newman EI & Whitmore TC 70* (BM). Nayawani forest, *Newman EI & Whitmore TC 528* (BM).

***Vernonia thomsoniana* Oliv. & Hiern ex Oliv.**

Spindly shrub or climber, up to 7 m high. Numerous capitula in dense sub-globose clusters about 5 cm across. Florets mauve to white.

**Flowering:** July-September. **Habitat:** Edge of riparian forest, woodland. **Altitude:** c. 1000 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa.

**Localities:** West bank of Phalombe River, at base of mountain, *Chapman JD & Chapman EG 7805* (K). Mchese Mt., Nthambi Gorge above Misomali, *Chapman JD & Chapman EG 8838* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9220* (FHO).



*Vernonia wollastonii* S.Moore

Scrambling shrub, up to 4 m high. Numerous capitula in lax clusters. Florets mauve, fading to white.

**Flowering:** July-August. **Habitat:** In thickets at edge of riparian forest, forest clearings. **Altitude:** 1800-1950 m. **Distribution:** Eastern Africa from Ethiopia and Sudan southwards to South Africa (Transvaal and KwaZulu-Natal).

**Localities:** Phalombe Gorge, *Chapman JD & Chapman EG 7942* (FHO). Thuchila Plateau, *Newman EI & Whitmore TC 178* (BM). Nayawani forest, *Newman EI & Whitmore TC 542* (BM).

BALSAMINACEAE  
Ref. Grey-Wilson, 1980

*Impatiens oreocallis* Launert

Weak-stemmed, straggling herb, up to 40 cm high and forming mats, up to 60 cm across. Leaves thinly ovate-lanceolate, dark green above, greyish-glaucous below; margin serrate, ciliate towards the base. Flowers purplish-pink.

**Flowering:** June. **Habitat:** Streambanks in forest, on seepage rocks. **Altitude:** c. 1150 m. **Distribution:** Only known from C. & S. Malawi.

**Localities:** Namitambo Valley, below Chambe, overlooking Likabula, *Chapman JD & Jenkins P 9546* (FHO).

*Impatiens quisqualis* Launert

Perennial herb, to more than 1 m high. Hairy on the venation on lower leaf surface. Flowers white with a yellow splash.

**Flowering:** May. **Habitat:** Shady streambanks. **Altitude:** c. 1800 m. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Chambe Basin, *Chapman JD 5641* (FHO).

*Impatiens shirensis* Baker f.

Soft-wooded, multi-stemmed shrub, up to 3 m high. Stems dark red. Leaves glabrous. Flowers pale pink or white with small yellow markings, fragrant.

**Flowering:** February, August. **Fruiting:** August. **Habitat:** Riparian forest, shrubberies at forest edge, gaps in cedar forest. **Altitude:** c. 2100 m. **Occurrence:** Common, locally abundant. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Lichenya Plateau, *Chapman JD 524* (FHO). Source of the Linji Stream, Lichenya Plateau, *Chapman JD & Chapman EG 7228* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8359* (MO).

*Impatiens sylvicola* Burt Davy

Scrambling herb, up to 40 cm high. Nodes not noticeably swollen. Flowers purplish-pink with 2 deep pink spots at base of lateral petals. Ovary hairy.

**Flowering:** February, June, August. **Fruiting:** June. **Habitat:** Damp forest floor, often near streams. **Altitude:** 1700-2100 m. **Occurrence:** Locally abundant. **Distribution:** Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7226* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9161* (FHO).

*Impatiens walleriana* Hook.f.

Herb, up to 75 cm high. Flowers vary in colour from purple-pink or orange to violet, but not white.

**Flowering:** September. **Habitat:** Forest, especially along paths, gullies and water-courses. **Occurrence:** Locally common. **Distribution:** Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Mulosa Stream, at Lauderdale Crater entrance, *Chapman JD 6492* (FHO).

*Impatiens zombensis* Baker f.

Herb, up to 1 m high but often less. Slightly swollen nodes. Flowers pink to purplish-pink but no dark spots. Ovary glabrous.

**Flowering:** February, August, October. **Habitat:** Damp, shady places. **Altitude:** 1000-1850 m. **Occurrence:** Common, locally abundant. Lichenya Plateau, *Chapman JD & Tawakali EJ 5537* (FHO). **Distribution:** Malawi and Serre Tumbine in Mozambique.

**Localities:** Mulosa Gorge, below Manga, *Chapman JD 6571* (FHO). Little Lichenya River Gorge, *Chapman JD & Chapman EG 8342* (MO). Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG 8512* (FHO).

BEGONIACEAE

*Begonia brevibracteata* Kupicha

Succulent-stemmed, spreading herb, up to 1 m high. Leaves glabrous, distinctly serrated margins, petioles and veins red. Flowers white, pinkish below, with yellow stamens.

**Flowering:** February. **Fruiting:** February. **Habitat:** Evergreen forest on mossy rock faces and by the path. **Altitude:** 900-1750 m. **Distribution:** S. Malawi.

**Localities:** Entrance to Ruvo Gorge, just above the power station, *Chapman JD & Chapman EG 8330* (FHO). Fort Lister to Sombani path, *Chapman JD & Chapman EG 8351* (FHO).

*Begonia nyassensis* Irmsch.

Perennial herb, up to 30 cm high. Leaves glabrous, margin obscurely serrated. Flowers white or very pale pink.

**Habitat:** On damp rocks and cliffs. **Altitude:** c. 2000 m. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Chambe Basin, *Hilliard OM & Burt BL 4609* (E).



## BIGNONIACEAE

Ref. Brummitt, 1974.

### *Markhamia obtusifolia* (Baker) Sprague

Small tree, up to 12 m high. Pinnate leaves up to 60 cm long. Flowers funnel-shaped, bright yellow, the lower lobes streaked with dark red. Fruits sickle-shaped, pod-like, flattened, velvety tomentose with golden hairs.

**Flowering:** January. **Fruiting:** May-June. **Habitat:** Forest edge and *Brachystegia* woodland. **Altitude:** 600-800 m. **Distribution:** D.R. Congo and Kenya to South Africa, Angola and Namibia.

**Localities:** Lower mountain slopes near Kambenje's Bath, *Chapman JD 382* (FHO). Phalombe area, *Chapman JD 566* (FHO). Linji Stream, Likabula, *Chapman JD & Chapman EG 7016* (FHO). Mt. Mulanje foot, *Chapman JD & Chapman EG 8329* (MO).

### *Stereospermum kunthianum* Cham.

Tree, up to 12 m high. Bark grey, flaking in round patches. Flowers pink with red streaks, funnel-shaped, appearing before the leaves. Fruit capsules cylindrical, up to 70 cm long.

**Flowering:** September-November. **Fruiting:** January-June. **Habitat:** *Brachystegia* and transition woodland. **Altitude:** c. 900 m. **Distribution:** Senegal to Ethiopia, southwards to Zimbabwe and Mozambique.

**Localities:** Foot of Chikomwe Hill, *Chapman JD & Chapman EG 8088* (FHO). Far down the Likabula Valley, *Chapman JD & Chapman EG 8948* (FHO). Mchese Mt., Nabwato valley, *Chapman JD & Chapman EG 9125* (FHO).

### *Tecomaria capensis* (Thunb.) Spach

ssp. *nyassae* (Oliv.) Brummitt

Shrub or small tree, up to 6 m high. Pinnate leaves 4-5-jugate. Flowers orange-red, calyx teeth more than 3 mm long.

**Flowering:** May-October. **Fruiting:** May-July. **Habitat:** Open evergreen forest, forest edge, in tall grass. **Altitude:** c. 950 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and NE Angola.

**Localities:** Thuchila Hut, *Chapman JD 5685* (FHO). Above Esperanza, *Chapman JD 6657* (FHO).

## BOMBACACEAE

### *Bombax rhodognaphalon* K. Schum.

var. *rhodognaphalon*

Tree, up to 30 m high. Deciduous. Leaves digitate, glabrous. Flowers pale yellow, linear, tomentellous on both surfaces, stamen filaments red. Fruit capsule ellipsoid, 6 × 3 cm, reddish-brown wool surrounds the seeds.

**Flowering:** June-September. **Fruiting:** September-October. **Habitat:** Woodland. **Altitude:** c. 700 m. **Distribution:**

Kenya, Tanzania and Mozambique. **Comments:** Planted as an ornamental at the foot of Mt. Mulanje, although it is native in lowland forest elsewhere in its distribution area.

**Localities:** Lichenya F. R., Chief Mabuka's Court, *Chapman JD 6474* (FHO). Tinyade, where the road to the estate leaves the Likabula-Phalombe road, *Chapman JD & Chapman EG 8639* (FHO).

## BORAGINACEAE

### *Cordia africana* Lam.

Syn. *Cordia abyssinica* R.Br.

Tree, up to 20 m high. Deciduous. Leaves broadly ovate, lower surface has a velvety feel due to orange-brown indumentum. Flowers white.

**Habitat:** Edge of riparian forest, wooded grassland. **Altitude:** 950-1300 m. **Distribution:** Widespread in tropical Africa and South Africa (Transvaal).

**Localities:** Above Esperanza, west branch of Nakolu Stream, *Chapman JD 6675* (FHO). Entrance to the Phalombe Gorge, *Chapman JD & Chapman EG 7830* (FHO).

### *Trichodesma ambacense* Welw.

ssp. *hockii* (De Wild.) Brummitt

Perennial herb, up to 50 cm high, with a huge, single or divided root, up to 30 cm long or more. Stem red with short bristly hairs. Calyx reddish-brown, corolla lobes purplish-blue fading to white to brown in the centre.

**Flowering:** August. **Habitat:** Woodland and bare ground of fire traces. **Altitude:** c. 950 m. **Distribution:** Nigeria, Cameroon; S. Sudan to W. Zimbabwe and N. Botswana.

**Localities:** Foot of Mchese Mt. close to Bwaibwai forest village, *Chapman JD & Chapman EG 8823* (FHO).

## BURMANNIACEAE

Ref. Cowley, 1988.

### *Gymnosiphon* sp.

Tiny herb, less than 10 cm high, with no leaves and poorly developed roots. Flowers white with yellow centres, the corolla tube spreading into three grooved lobes.

**Flowering:** February. **Habitat:** Forest floor. **Altitude:** c. 1100 m. **Occurrence:** Possibly rare (only 2 plants found). **Localities:** Head of the Nasato Stream, below the cliffs of Cilemba, *Chapman JD & Chapman EG 7179* (E).

## BURSERACEAE

### *Commiphora africana* (Arn.) Engl.

Small deciduous tree, up to 4 m high. Bark smooth, grey, peeling. Spiny. Flowers appear



before the leaves. Fruits subglobose, ripening pink, 1.2 cm diameter.

**Fruiting:** July. **Habitat:** Rocky river bank. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa; South Africa (Transvaal) and Namibia.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8724* (FHO).

*Commiphora eminii* Engl.

ssp. *zimmermannii* (Engl.) J.B.Gillett  
Syn. *Commiphora puguensis* Engl.

Deciduous tree, up to 10 m high. Bark smooth, grey, often fluted, sometimes cracked into rectangular shapes. Slash sparingly exudes a colourless liquid smelling of mangos. Pinnate leaves. Fruits subglobose, reddish-green.

**Fruiting:** December-June. **Habitat:** Lithophytic forest, boulder fields, rocky river banks. **Altitude:** 750-1200 m. **Distribution:** Kenya, Tanzania, Zambia, Malawi and Mozambique. **Comments:** Leaves and fruits scented like the slash when crushed.

**Localities:** Phalombe River, in Fort Lister forest, *Chapman JD 552* (FHO). Likabula Valley, source of Nasato Stream below Cilemba, *Chapman JD & Chapman EG 7405* (FHO). F. R. boundary, between Phalombe and Chiphalombe Streams, *Chapman JD & Chapman EG 7743* (FHO). Below Chambe West Face, *Chapman JD & Chapman EG 7753* (FHO). Northern foot of Mchese Mt., Ulolo village, Nampende, *Chapman JD & Chapman EG 8630* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8991* (FHO).

*Commiphora mollis* (Oliv.) Engl.

Small, deciduous tree, up to 8 m high. Bark charcoal-grey, flaking. Pinnate leaves densely pubescent. Fruits about 1 cm diameter, greyish due to very short hairs. The fleshy part of the fruit is sticky and aromatic.

**Fruiting:** August. **Habitat:** On kopjes in woodland. **Altitude:** c. 800 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Namibia, Botswana and South Africa (Transvaal).

**Localities:** Nandiwo Valley, at foot of Mchese Mt, *Chapman JD & Chapman EG 9235* (FHO).

**BUXACEAE**

Ref. Dowsett-Lemaire & White, 1990 c.

*Buxus nyasica* Hutch.

Small tree, up to 8 m high. Leaves lanceolate. Fruit a 3-valve, greyish capsule which dehisces explosively. Each valve has a long projection.

**Fruiting:** September. **Habitat:** Forest understorey. **Altitude:** c. 1300 m. **Occurrence:** Locally common. **Distribution:** S. Malawi (Soche Mt. and the Mulanje massif).

**Localities:** Mchese Mt., Nthambi Gorge, above Misomali, *Chapman JD & Chapman EG 8828* (FHO).

**CACTACEAE**

*Rhipsalis baccifera* (J. Mill.) Stearn

Succulent, epiphytic shrub, pendent to 1-3 m. Furrowed, slender stem, pale green. Leaves absent. Flowers white, up to 10 mm in diameter. Fruit spherical, pink or white with viscid pulp.

**Fruiting:** October. **Habitat:** Forest or forest edge. **Altitude:** c. 900 m. **Distribution:** Widespread in Africa.

**Localities:** Mulosa Stream, below Lauderdale Crater, *Chapman JD 6514* (FHO). Lower slopes of Mulanje above Esperanza, *Chapman JD 6698* (FHO).

**CAMPANULACEAE**

(includes Lobeliaceae)

*Cyphia brummittii* Thulin

Herbaceous twiner/climber, up to 2 m high. Stem sparsely branched. Leaves petiolate. Flowers white, groups of 2-several in the leaf axils. Capsule ovoid-globose.

**Flowering:** May. **Fruiting:** May. **Habitat:** Montane grassland, among shrubs. **Altitude:** c. 2200 m. **Occurrence:** Common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Slopes of Cilemba Peak, above Lichenya path, *Brummitt RK et al. 15905* (K). Chambe Peak, *Chapman JD 5629* (FHO).

*Cyphia decora* Thulin

Delicate, erect herb, up to 25 cm high with a large root-tuber. Leaves sessile or shortly petiolate, linear. Flowers pinkish-purple. Capsules ovoid to subglobose.

**Flowering:** January-February. **Habitat:** Montane grassland, often amongst sedges in wet flushes on rocks. **Altitude:** 1800-2000 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9469* (FHO). Sombani Basin, *Goyder D & Paton A 3657* (K).

*Cyphia lasiandra* Diels

Herbaceous twiner, up to about 1.5 m long, often forming tangled masses. Leaves shortly petiolate, linear. Flowers pink to purple, with corolla lobes split to base at the sides. Capsule ovoid to subglobose.

**Flowering:** February-May. **Habitat:** Rocky slopes, montane grassland, *Brachystegia* woodland. **Altitude:** 1000-2350 m. **Occurrence:** Rare at lower altitudes in *Brachystegia* woodland. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Top of Cilemba Peak, *Brummitt RK et al. 15941* (K). Likabula Valley, Chapaluka Path, *Chapman JD & Chapman EG 9060* (FHO). Sombani Plateau, *Wild H 6222* (K).



***Lobelia baumannii* Engl.**

Procumbent, straggling or climbing herb, up to 70 cm long. Stem ribbed or narrowly winged. Leaves narrowly to broadly ovate, petiolate. Flowers white with mauve tinge.

**Flowering:** June. **Habitat:** Forest clearings, shaded pathsides. **Altitude:** c. 1350 m. **Distribution:** E. D.R. Congo, Kenya, Tanzania, Burundi, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Great Ruu Gorge, *Richards HM 16742* (K).

***Lobelia blantyrensis* E.Wimmer**

Erect, weak-stemmed herb, up to 50 cm high. Leaves narrowly elliptic, coarsely crenulate on the margins, pubescent. Flowers deep blue with white centres.

**Flowering:** April-September. **Habitat:** Montane grassland, especially along paths or among shrubs, forest edges. **Altitude:** 1950-2200 m. **Occurrence:** Common. **Distribution:** Mt. Mulanje, Malawi and Gúruè Mts., Mozambique.

**Localities:** Chiphalombe Shelf, *Chapman JD & Chapman EG 8078* (K). Madzeka, on the way to the col above Madzeka Hut, en route for the Mulosa Valley, *Chapman JD & Chapman EG 8804* (FHO). Path from Sombani to Madzeka, *Chapman JD & Patel IH 5750* (FHO).

***Lobelia trullifolia* Hemsl. ssp. *trullifolia***

Erect or decumbent, delicate herb, up to 30 cm high. Leaves ovate to linear, narrowing up the stem. Flowers mid-blue, with yellow and white markings at the throat.

**Flowering:** February-September. **Habitat:** Grassland, forest edge, *Brachystegia* woodland; especially on or by paths and in seepage areas over rocks. **Altitude:** 800-2300 m. **Occurrence:** Locally common. **Distribution:** Ethiopia, Kenya, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Chambe Peak, *Chapman JD 5624* (K). Likulezi Valley at the Ng'ono waterfall, *Chapman JD & Chapman EG 7528* (E, K). Esperanza, *Chapman JD & Chapman EG 7800* (K). Mulanje foot, Limbuli, *Chapman JD & Chapman EG 9279* (FHO). Muluzi River, Chisongeli Forest, *Chapman JD & Chapman EG 9308* (FHO).

***Wahlenbergia abyssinica* (Hochst. ex A.Rich.)**

Thulin ssp. *abyssinica*

Perennial herb, up to 50 cm high. Leaves alternate, sessile, linear, undulate-dentate and slightly inrolled at the margin. Flowers pale mauve.

**Flowering:** May-September. **Habitat:** On sandy paths, grassland, forest clearings. **Altitude:** c. 1400 m. **Distribution:** Ethiopia and Somalia to South Africa (KwaZulu-Natal) and Angola. **Localities:** Lichenya path between the Likabula and Satwe Rivers, *Goyder DJ et al. 3187* (K). Path from Likabula to Lichenya Plateau, *Strugnell AM 5* (FHO).

***Wahlenbergia capillacea* (L.f.) A.DC.**

ssp. *tenuior* (Engl.) Thulin

Erect, slender herb, up to 50 cm high. Leaves alternate, linear. Flowers pinkish-purple or blue.

**Flowering:** February-July. **Habitat:** Montane grassland. **Altitude:** c. 2000 m. **Distribution:** Kenya, Tanzania, Burundi, Malawi, Mozambique and Zimbabwe.

**Localities:** Chambe-Thuchila path, on Thuchila side of the saddle, *Chapman JD H/683* (K). Linji (Upper Lichenya) Plateau, *Chapman JD & Chapman EG 7271* (K). Mt. Mulanje F.R., *Chapman JD & Patel IH 5774* (K).

***Wahlenbergia capitata* (Baker) Thulin**

Short-lived perennial, branching near the base. Leaves alternate, sessile, narrowly lanceolate. Flowers blue, white or mauve; the corolla split almost to the base.

**Habitat:** Deciduous woodland. **Distribution:** D.R. Congo, Rwanda, Burundi, Uganda, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Beside the Likabula-Chambe path, *Chapman JD 566* (BR, SRGH).

***Wahlenbergia madagascariensis* A.DC.**

Prostrate or decumbent herb, up to 50 cm long, often rooting at nodes. Leaves opposite, sessile, elliptic to narrowly ovate, margin undulate-crenate. Flowers creamy-white.

**Flowering:** February-July. **Habitat:** Evergreen forest, edges of paths and fire-breaks in rough, montane grassland, pine plantations. **Altitude:** 1750-2150 m. **Occurrence:** Locally common. **Distribution:** Malawi, Mozambique, Zimbabwe, South Africa, Swaziland and Madagascar.

**Localities:** Path from Thuchila Hut to head of the Ruu Basin, *Brummitt R.K. 9670* (K). Sombani Basin, N.E. foot of Matambale, *Brummitt RK 11333* (K). Below Lichenya Forestry Hut, *Brummitt RK et al. 15937* (K).

***Wahlenbergia virgata* Engl.**

Erect, delicate, perennial herb, up to 50 cm high. Leaves few, very small and inconspicuous. Flowers pale mauve-blue.

**Flowering:** April-September. **Habitat:** Along paths and fire-breaks in montane grassland, forest margins and *Brachystegia* woodland. **Altitude:** 1900-2100 m. **Occurrence:** Locally common. **Distribution:** From Ethiopia and Sudan southwards to South Africa, Swaziland and Lesotho.

**Localities:** South of Thuchila Hut, *Brummitt R.K. 9752* (K). At Sombani Hut, *Iwarsson M & Ryding O 774B* (K).

**CANELLACEAE**

***Warburgia ugandensis* Sprague var. *ugandensis***  
Syn. *Warburgia salutaris* (G. Bertol.) Chiov.

Tree, up to 27 m high. Bark dark brown, slash red with slightly spicy odour. Leaves shiny and dark green above, peppery to the taste. Fruit green becoming purplish when ripe, ovoid (4 cm × 3 cm).

**Fruiting:** September-October. **Habitat:** Lithophytic forest, edge of gully forest. **Altitude:** 1150-1400 m. **Occurrence:**



Occasional. **Distribution:** Ethiopia, D.R. Congo, Uganda, Kenya, Tanzania and Malawi. **Comments:** Blue monkeys eat the fruits.

**Localities:** Source of the Nasato Stream below the Cilemba cliffs, *Chapman JD & Chapman EG 8111* (FHO). Phalombe area, *Chapman JD & Chapman EG 8873* (FHO).

## CAPPARACEAE

*Cladostemon kirkii* (Oliv.) Pax & Gilg

Shrub or small tree, up to 6 m high. Leaves 3-foliate. Flowers in lax racemes, yellowish-green. Fruit up to 10 cm in diameter, pale yellow-brown, globose above narrowing abruptly into a stalk.

**Fruiting:** May. **Habitat:** Forest understorey or open hillside. **Altitude:** 550-900 m. **Distribution:** From Kenya and Tanzania to South Africa (KwaZulu-Natal).

**Localities:** Top of Chikomwe Hill, *Chapman JD & Chapman EG 7545* (FHO). Lichenya F. R., T.A. Mabuka Milonde Court, *Chapman JD & White F 8426* (FHO).

*Cleome densifolia* C.H.Wright

Shrubby, viscid, perennial herb or small shrub, up to 2 m high. Leaves simple, crowded, becoming progressively smaller up the stem. Inflorescence dense. Flowers pink, the two upper petals having a purple-margined spot.

**Flowering:** May-September. **Habitat:** Open, depleted, cedar forest; forest edges; shrubby, montane grassland. **Altitude:** 1800-2000 m. **Occurrence:** Local. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** At the saddle connecting Chambe Basin with the main massif, *Chapman JD 5637* (FHO). At the Saddle, Chambe approach to the Knife-Edge, *Chapman JD & Chapman EG 7619* (FHO).

*Cleome monophylla* L.

Erect, annual herb, up to 60 cm high. Simple, widely-spaced leaves. Inflorescence lax, flowers rose-pink or mauve.

**Habitat:** Cultivated land. **Altitude:** c. 650 m. **Distribution:** Widespread throughout Africa.

**Localities:** Mt. Mulanje foot, close to the Malawi Tea Factory, *Chapman JD & Chapman EG 8293* (MO).

*Maerua angolensis* DC.

Shrub or small tree, up to 7 m high. Leaves simple, broadly ovate, mucronulate at apex, petioles up to 3 cm long. Flowers with green sepals, no petals and stamens up to 4 cm long.

**Flowering:** July. **Habitat:** In a village compound just outside the F.R. at the northern foot of Mchese Mt. **Altitude:** c. 700 m. **Distribution:** Widely distributed in tropical Africa and northern parts of South Africa.

**Localities:** Mchese Mt., northern foot, *Chapman JD & Chapman EG 9233* (FHO).

*Maerua pubescens* (Klotzsch) Gilg

Shrub or small tree, up to 5 m high. Leaves trifoliate. Flowers with white petals, stamens up to 2 cm long. Fruits cylindrical, up to 10 cm long, slightly constricted between the seeds.

**Fruiting:** April-June. **Habitat:** On termite mounds or rocky, riverbanks in *Brachystegia* woodland. **Altitude:** c. 800 m. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Madagascar.

**Localities:** Mchese Mt., above V.H. Nalingules, *Chapman JD 589* (FHO). Near Likabula forestry depot, *Chapman JD & Chapman EG 7438* (FHO). Low down the Likabula Valley, *Chapman JD & Chapman EG 9512* (FHO).

## CARYOPHYLLACEAE

*Cerastium indicum* Wight & Arn.

Straggling herb, up to 60 cm long. Inflorescence sticky. Flowers white.

**Flowering:** February-July. **Habitat:** *Widdringtonia* forest, paths through plantations and montane grassland. **Altitude:** 1800-2100 m. **Occurrence:** Frequent. **Distribution:** Eastern Africa from Ethiopia to Cape Province, also Cameroon and the D.R. Congo.

**Localities:** Chambe Plateau, *Blackmore S et al. 337* (K). Sombani Basin, foot of Matambale, *Brummitt RK 11337* (K). Thuchila Cottage, *Jackson G 1987* (K). Path to West Peak, *Richards HM 16607* (K).

*Silene burchellii* Ottl. var. *angustifolia* Sond.

Erect, perennial herb, up to 70 cm high. Leaves linear and oblong-lanceolate. Flowers pink.

**Habitat:** Montane grassland. **Altitude:** c. 1850 m. **Distribution:** Eastern Africa from Ethiopia and Somalia to South Africa and Angola.

**Localities:** Chambe Plateau, *Chapman JD & Chapman EG 8133* (MO).

## CECROPIACEAE

*Ref. Berg 1978.*

*Myrianthus holstii* Engl.

(previously in Moraceae)

Tree, up to 20 m high, with a tendency to produce stilt roots. Spreading crown. Leaves very large, 5-6 digitately compound, discolorous. Flowers yellowish-brown.

**Flowering:** October. **Habitat:** Stream-fringing forest. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Uganda, Kenya and E. D.R. Congo to Zimbabwe.

**Localities:** Mulosa Stream, just below the first dam; *Chapman JD 6562* (FHO). Crater Gorge, Little Mulosa River, *Chapman JD 6651* (FHO).



## CELASTRACEAE

(includes Hippocrateaceae)

Refs. Archer & Van Wyk, 1997; Robson, 1989; Robson et al., 1994.

### *Catha edulis* (Vahl) Endl.

Tree, up to 20 m high, with a spreading crown. Bark rather corky, closely corrugated, corrugations easily rubbed off. Opposite leaves with serrated margin. Flowers small, white.

**Flowering:** February-April. **Habitat:** Forest edges. **Altitude:** 650-1550 m. **Distribution:** Widespread in eastern Africa from Ethiopia to Cape Province in South Africa.

**Localities:** Chambe path, *Chapman JD 532* (FHO). Between Glenorchy and Likabula forestry depot, *Chapman JD & Chapman EG 6968* (FHO). Likabula Valley, at the Satwe Stream, *Chapman JD & Chapman EG 7189* (FHO). Above Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8861* (FHO).

### *Maytenus acuminata* (L.f.) Loes.

var. *acuminata*

Tree, up to 25 m high but often less. Leaves ovate to narrowly lanceolate, acuminate apex, latex threads present. Flowers small, usually cream or greenish-white but occasionally dull red. Fruit capsules ripening pinkish-red.

**Flowering:** November-May. **Fruiting:** June-February. **Habitat:** Lithophytic and riparian forest. **Altitude:** 850-2300 m. **Occurrence:** Common. **Distribution:** From the mountains of Cameroon, E. D.R. Congo, Kenya and Rwanda to the Western Cape in South Africa.

**Localities:** Top of the Mparamtha path, Chambe, *Chapman JD 2121* (FHO). Chambe Plateau, *Chapman JD 2136* (FHO). Licheya Plateau, *Chapman JD 5866* (FHO). Entrance to Lauderdale Crater, *Chapman JD 6488* (FHO). Outer slopes, where the Boma Path crosses the Chitakali Stream, *Chapman JD & Chapman EG 6871* (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7346* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 7651* (FHO). Nessa Path, Lichenya Plateau, *Chapman JD & Chapman EG 8194* (FHO). Ruu Gorge, *Chapman JD & Chapman EG 8334* (FHO). Sombani Plateau, below the north east shoulder of Namisili, *Chapman JD & Chapman EG 8769* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9145* (FHO).

### *Maytenus acuminata* (L.f.) Loes.

var. *uva-ursi* Brenan

Shrub, usually up to 2 m high but may reach 3.5 m. Leaves small, elliptic, blunt or rounded at the apex, with latex threads present. Flowers deep pink to dark red. Fruits ripening reddish.

**Flowering:** May-February. **Fruiting:** May-July. **Habitat:** Montane thicket, montane lithophytic forest and rocky hillsides. **Altitude:** 1750-2450 m. **Distribution:** Endemic to Mt. Mulanje. **Comments:** A few individuals exhibit characteristics between var. *acuminata* and var. *uva-ursi*.

**Localities:** Chambe Peak, *Chapman JD 5618* (FHO). Chambe saddle to Lichenya, *Chapman JD 5645* (FHO). Cilemba Peak, above the Linji Plateau, *Chapman JD 6060* (FHO). Sapitwa, *Chapman JD & Chapman EG 7569* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7975* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8080* (FHO). Lower slopes of West Peak, above the Chambe-Lichenya path, *Chapman JD & Chapman EG 8158* (FHO). Madzeka Hut, *Chapman JD & Chapman EG 8375A* (FHO). Sombani Plateau, the N.E. shoulder of Namisili, *Chapman JD & Chapman EG 8767* (FHO).

### *Maytenus buchananii* (Loes.) Wilczek

Spreading, semi-scrambling shrub, up to 4 m high, armed with axillary spines. Leaves elliptic to ovate. Flowers small, white, in axillary inflorescences. Fruit capsule red, seeds orange-brown.

**Flowering:** March-May. **Fruiting:** May-August. **Habitat:** Rocky river banks, edge of stream-fringing forest. **Altitude:** 800-1400 m. **Distribution:** From Guinea to Ethiopia, south to Cape Province, South Africa and west to Angola and R. Congo.

**Localities:** Phalombe River, *Chapman JD 577* (FHO). Likulezi Valley, at the Ngono waterfall, *Chapman JD & Chapman EG 7526* (FHO). Chiphalombe River Gorge, *Chapman JD & Chapman EG 7926* (FHO). Mulosa River, *Chapman JD & Chapman EG 8746* (FHO).

### *Maytenus heterophylla* (Eckl. & Zeyh.) N. Robson

Small tree, up to 6 m high, armed with spines. Branches greenish-brown when young, purplish-brown when older. Flowers white. Fruit capsules tri-locular, yellow to red.

**Fruiting:** January-April. **Habitat:** Edges of forest, woodland. **Altitude:** 550-1100 m. **Distribution:** Ethiopia to the Cape in South Africa, Angola, Namibia and Madagascar.

**Localities:** Chitakali boundary, *Chapman JD & Chapman EG 6814* (FHO). Likabula, *Chapman JD & Chapman EG 7041* (FHO). Nasato Stream, below Cilemba, *Chapman JD & Chapman EG 7150* (FHO). Western foot of Mchese Mt., along Namajani Stream, *Chapman JD & Chapman EG 8643* (FHO). Lichenya F.R., T.A. Mabuka, Milonde Court, *Chapman JD & White F 8442* (FHO).

### *Maytenus senegalensis* (Lam.) Exell

Large shrub or small tree, up to 10 m high, spiny. Branchlets reddish-purple, glaucous. Leaves obovate, pale green, glaucous. Flowers white. Fruit capsule red, 2-locular.

**Flowering:** April-June. **Habitat:** *Brachystegia* woodland and maize gardens, often on termite mounds. **Altitude:** c. 800 m. **Distribution:** Senegal to Eritrea and southwards to South Africa (Transvaal, KwaZulu-Natal) and Botswana.

**Localities:** Likulezi R.C. Catechist Centre, *Chapman JD & Chapman EG 7705* (FHO). 0.5 km from Likabula Forestry Office, *Chapman JD & Chapman EG 8525* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9511* (FHO).



***Maytenus undata* (Thunb.) Blakelock**

Shrub or small tree, up to 15 m high. Leaves pale green or silver green, more or less elliptic, apex acute. Flowers white. Fruit capsules yellow, seeds reddish-brown.

**Flowering:** February-July. **Fruiting:** April-July. **Habitat:** Riverine and lithophytic forest, *Brachystegia* woodland. **Altitude:** 800-1600 m. **Distribution:** From Guinea to Ethiopia, southwards to Cape Province in South Africa, Angola, R. Congo and Madagascar.

**Localities:** Top dam (Boma Water Intake) on the Mulosa Stream, *Chapman JD 6516* (FHO). Mulosa Stream, above the Boma Water Intake, *Chapman JD 6550* (FHO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 7077* (FHO). Likabula Valley, source of Nasato Stream, *Chapman JD & Chapman EG 7389* (FHO). Likabula Valley, *Chapman JD & Chapman EG 7459* (FHO). Chambe Shelf above Mwana Mulanje, *Chapman JD & Chapman EG 7607* (FHO). Likulezi River, below the gorge, *Chapman JD & Chapman EG 7733* (FHO). West bank of Phalombe River, *Chapman JD & Chapman EG 7808* (FHO). Mchese Mt., along the Namajani Stream, *Chapman JD & Chapman EG 8687* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9182* (FHO).

***Mystroxydon aethiopicum* (Thunb.) Loes.**

Syn. *Cassine aethiopica* Thunb.

Tree, up to 27 m high. Leaves dark green and glossy above, margin undulate-crenate. Flowers greenish. Fruits globose, green ripening purplish-red.

**Flowering:** August-November. **Fruiting:** March-November. **Habitat:** Riparian and lithophytic forest, forest edge. **Altitude:** 850-2250 m. **Distribution:** Guinea, Cameroon and Nigeria in West Africa, eastern Africa from Sudan and Ethiopia to S. Cape in South Africa, Angola and Namibia.

**Localities:** Likulezi Valley, *Chapman JD 491* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6854* (FHO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 7359* (FHO). Chambe West Face Shelf, Nasato Stream source, *Chapman JD & Chapman EG 7650* (FHO). Phalombe River, *Chapman JD & Chapman EG 7812* (FHO). Chiphalombe River Gorge, *Chapman JD & Chapman EG 7920* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8491* (FHO). Sombani Plateau, near Litakala Peak, *Chapman JD & Chapman EG 8763* (FHO). Mchese Mt., Nanthale Stream, above Bwaibwai forest village, *Chapman JD & Chapman EG 8889* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9206* (FHO). Mchese Mt., Nampende valley, *Chapman JD & Chapman EG 9245* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9320* (FHO).

***Pleurostyliya africana* Loes.**

Tree, up to 20 m high. Branches becoming reddish. Leaves obovate to elliptic. Flowers greenish. Fruits green-white.

**Fruiting:** June. **Habitat:** Stream-fringing evergreen forest. **Altitude:** c. 900 m. **Distribution:** S. D.R. Congo, Kenya and Uganda to Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Chambe Peak, *Chapman JD 376* (FHO). Likulezi River near Likulezi Farm, *Chapman JD & Chapman EG 7436* (FHO). Thuchila River at Beacon, *Chapman JD & Chapman EG 7708* (FHO).

***Pleurostyliya capensis* (Turcz.) Loes.**

Emergent tree, up to 27 m high. Slash orange. Leaves elliptic. Fruits green.

**Fruiting:** June. **Habitat:** Evergreen forest between cliffs and the river. **Altitude:** c. 1550 m. **Occurrence:** Only locality known. **Distribution:** S. Malawi and South Africa. **Comments:** Further collections and investigations are needed to determine whether or not this is *Pleurostyliya capensis* and also if it is distinct from *P. africana*.

**Localities:** Phalombe River Gorge, *Chapman JD & Chapman EG 7960* (FHO).

***Pterocelastrus echinatus* N.E.Br.**

Tree, up to 12 m high. Slash: orange striations giving way to deep red. Leaves usually alternate. Flowers small, white. Fruits red with spiky protuberances.

**Flowering:** May-October. **Fruiting:** May, November. **Habitat:** Evergreen forest, lithophytic and stream-fringing forest, rocky river banks. **Altitude:** 1400-2350 m. **Distribution:** Malawi to South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Boma Path to Lichenya Plateau, *Chapman JD & Chapman EG 6919* (FHO). Thuchila Shelf, *Chapman JD & Chapman EG 7617* (FHO). Chiphalombe River Gorge, *Chapman JD & Chapman EG 7925* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7935* (FHO). Chiphalombe shelf, *Chapman JD & Chapman EG 8066* (FHO). Foot of West Peak above the Lichenya-Chambe path, *Chapman JD & Chapman EG 8150* (FHO). Sombani Plateau, below the north eastern shoulder of Namisili, *Chapman JD & Chapman EG 8768* (FHO). Big Ruu Valley, *Chapman JD & Chapman EG 9389* (FHO). Madzeka Valley, *Chapman JD & Patel IH 5799* (FHO).

***Reissantia parvifolia* (N.E.Br.) N.Hallé**

Syn. *Hippocratea parvifolia* Oliv.

Liane reaching the canopy at about 27 m. Slash rusty-orange. Opposite leaves. Flowers small, yellowish-green.

**Flowering:** January, June. **Habitat:** Stream-fringing forest. **Altitude:** 850-1200 m. **Distribution:** Widespread in tropical Africa, in South Africa (Transvaal) and Angola.

**Localities:** Below west face of Chambe Peak, *Chapman JD & Chapman EG 7096* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7693* (FHO). Likulezi River, *Chapman JD & Chapman EG 7735* (FHO).

***Simirestis goetzei* (Loes.) R.Wilczek**

Syn. *Hippocratea goetzei* Loes.

Liane, often reaching the canopy at 20 m. Stem dark reddish-brown with white lenticels. Flower buds cylindric, petals green with paler margins, strongly fragrant. Fruit boat-shaped, flattened, containing several winged seeds.



**Flowering:** September. **Fruiting:** May. **Habitat:** Forest and over trees on rocky river banks. **Altitude:** 900-1800 m. **Distribution:** Ethiopia to Malawi.

**Localities:** Chambe Shelf, above Mwana Mulanje, *Chapman JD & Chapman EG 7602* (FHO). Crater (Little Mulosa) River, *Chapman JD & Chapman EG 8090* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8567* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9328* (FHO). Lichenya Plateau, Nessa Path forest, *Chapman JD & Chapman EG 9464* (FHO).

## CHRYSOBALANACEAE

(previously in Rosaceae)

*Parinari curatellifolia* Planch. ex Benth.

Tree, up to 20 m high with a dense crown. Leaves oblong-elliptic, rounded at apex. Flowers white, tinged pink. Fruits an ellipsoid drupe.

**Fruiting:** May. **Habitat:** *Brachystegia* woodland, in damp places. **Altitude:** c. 900 m. **Occurrence:** Scattered. **Distribution:** Widespread in tropical Africa, extending into South Africa (Transvaal) and N. Namibia.

**Localities:** At base of Chambe Peak near Mwana-Mlanje, *Chapman JD 370* (FHO).

*Parinari excelsa* Sabine

Evergreen tree, up to 27 m high, with a very dense crown. Leaves elliptic, acuminate, discolorous. Flowers grey-tomentose on the outside. Fruits dark brown with pale grey speckling, ellipsoid.

**Flowering:** October. **Fruiting:** July. **Habitat:** Riparian forest. **Altitude:** 850-1320 m. **Occurrence:** Common.

**Distribution:** Widespread in tropical Africa.

**Localities:** Lauderdale, *Chapman JD 6604* (FHO). Likabula Valley, Chapaluka River crossing, *Chapman JD & Chapman EG 7111* (FHO). Likabula Valley, Nasato Stream just below the forest, *Chapman JD & Chapman EG 7455* (FHO). Phalombe Stream, below the gorge, *Chapman JD & Chapman EG 7826* (FHO).

## CLUSIACEAE

(Guttiferae)

Ref. Bamps, 1969.

*Garcinia buchananii* Baker

Tree, up to 25 m high but often less. Slash exudes yellow latex. Opposite leaves with numerous veins forming an angle of 30-60 degrees with the midrib. Flowers pale yellow. Fruit globular, up to 2.5 cm diameter, yellow or orange when ripe.

**Flowering:** September. **Fruiting:** November-January. **Habitat:** Riverine forest or woodland. **Altitude:** 880-1300 m. **Distribution:** Eastern tropical Africa from Sudan to Mozambique and Zimbabwe. **Comments:** Characteristic river-bank tree. Not separated from *G. huillensis* Welw. ex Oliv. in Flora Zambesiaca by N.K.B. Robson but P. Bamps (1969) treats them as separate species because of their differing habit and ecology.

**Localities:** Mulanje, perennial streambanks, *Chapman JD 428* (FHO). Mulosa Stream, at the Boma water intake at the entrance to Lauderdale Crater, *Chapman JD 6558* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6770* (FHO). Likabula Valley on the Chapaluka path, *Chapman JD & Chapman EG 7061* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7699* (FHO). Below Chambe West Face Shelf, *Chapman JD & Chapman EG 8979* (FHO).

*Garcinia kingaënsis* Engl.

Syn. *Garcinia mlanjiensis* Dunkley

Tree, up to 20 m high. Slash slowly exudes yellow latex which dries deep orange and resin-like. Opposite leaves with numerous veins almost at right angles with the midrib. Flowers creamy-white. Fruits ripening orange-yellow.

**Flowering:** July-August. **Fruiting:** October-June. **Habitat:** Stream-fringing forest and forested ravines. **Altitude:** 880-1600 m. **Distribution:** Tanzania to Zimbabwe.

**Localities:** Mulanje, *Chapman JD 304* (FHO). Chambe Saddle, *Chapman JD 378* (FHO). Mulosa Stream, above Lauderdale, *Chapman JD 6524* (FHO). West branch of Nakolu Stream (Pamba Stream) above Esperanza, *Chapman JD & Chapman EG 6687* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6769* (FHO). Likabula Valley, Chapaluka River crossing, *Chapman JD & Chapman EG 7110* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 7662* (FHO). Phalombe River, below the gorge, *Chapman JD & Chapman EG 7841* (FHO). Chiphalombe River, between the gorges, *Chapman JD & Chapman EG 7983* (FHO). Big Ruvo Valley, *Chapman JD & Chapman EG 9396* (FHO).

*Garcinia livingstonei* T. Anderson

Small tree, up to 12 m high. Yellow latex. Leaves dark green and glossy above, leathery, oblong to obovate, apex rounded to emarginate. Flowers cream or pale yellow. Fruits ripening orange to reddish.

**Fruiting:** July. **Habitat:** Stream-fringing forest. **Altitude:** 800-1000 m. **Occurrence:** Gregarious but not common. **Distribution:** From Guinea-Bissau to Ethiopia, East Africa and south to South Africa (Transvaal, KwaZulu-Natal) and Angola.

**Localities:** Foot of the western slopes of Mchese Mt., along the Namajani Stream, *Chapman JD & Chapman EG 8641* (FHO). Western foot of Mchese Mt., *Chapman JD & Chapman EG 8656* (FHO).

*Garcinia smeathmannii* (Planch. & Triana) Oliv.

Shrub or small tree, up to 10 m high. Yellow-orange latex. Leaves opposite, leathery, oblong or ovate-oblong, rounded or obtuse at apex. The main lateral veins curve upwards at the leaf margin. Flowers creamy-white. Fruits purplish-green ripening yellow.

**Flowering:** September. **Habitat:** River banks in forest. **Altitude:** c. 900 m. **Distribution:** From Guinea eastwards and southwards to Tanzania, Zambia, Malawi and Angola.

**Localities:** Thuchila River, *Chapman JD 427* (FHO).



***Harungana madagascariensis* Lam. ex Poir.**

Small tree, up to 12 m high. Slash exudes orange sap which turns red. Leaves ovate, truncate to cordate at base, short, rusty indumentum below. Flowers white, sweet-scented. Fruits yellow-orange up to 4 mm diameter.

**Flowering:** January. **Habitat:** Forest edge. **Altitude:** c. 750 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Chibigula Stream, Glenorchy, *Chapman JD & Chapman EG 7024* (FHO).

***Hypericum peplidifolium* A.Rich.**

Prostrate, perennial herb. Leaves very shortly petiolate, ovate to rounded. Flowers yellow.

**Flowering:** May. **Habitat:** Short grassland on fire trace. **Altitude:** 2300 m. **Occurrence:** Rare. **Distribution:** Mountains from Ethiopia and Sudan to Zimbabwe and Angola.

**Localities:** Between Madzeka Hut and Manene, on the ridge dividing the Madzeka Valley, *Chapman JD & Patel IH 5739* (FHO).

***Hypericum revolutum* Vahl**

Shrub, up to about 4 m high. Leaves narrow, lanceolate, sessile with clasping base. Flowers large and solitary, yellow, terminal.

**Flowering:** May-December. **Fruiting:** May onwards. **Habitat:** Forest edge and shrubberies in upland grassland. **Altitude:** 1400-2200 m. **Occurrence:** Frequent. **Distribution:** S.E. Nigeria, Cameroon, Ethiopia, Sudan, E. D.R. Congo, Rwanda, Burundi, East Africa to South Africa (Transvaal).

**Localities:** Lichenya cottage, *Chapman JD 323* (FHO). Chambe Peak, *Chapman JD 5604* (FHO). Likabula Valley, *Chapman JD & Chapman EG 7518* (FHO).

***Psorospermum febrifugum* Spach**

Shrub or small tree, up to about 4 m high with a rounded, drooping crown. Leaves pale below, venation conspicuous due to rusty tomentum. Flowers cream streaked with brown.

**Flowering:** October-November. **Habitat:** Open *Brachystegia* woodland amongst tall grass and bracken, or farm fallows. **Altitude:** 1050-1150 m. **Distribution:** From Sierra Leone, Central African Republic and Sudan south to Zimbabwe, Mozambique and Angola.

**Localities:** Above the first Chitakali Stream crossing on the Boma Path, *Chapman JD & Chapman EG 6803* (FHO). In the Fort Lister Gap, *Chapman JD & Chapman EG 8902* (FHO).

**COLCHICACEAE**

(previously in Liliaceae)

***Gloriosa superba* L.**

Scrambling, herbaceous vine. Flowers pale yellow, perianth segments narrow and wavy-edged.

**Flowering:** December. **Habitat:** Forest edge. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Foot of Mt. Mulanje, along the Chitakali, *Chapman JD & Chapman EG 6956* (FHO).

**COMBRETACEAE**

***Combretum collinum* Fresen.**

Tree, up to 12 m high. Bark longitudinally striated. Fruits reddish-brown, with a metallic appearance.

**Fruiting:** May. **Habitat:** Rocky hillside. **Altitude:** c. 900 m. **Distribution:** Widespread in tropical Africa, South Africa and Namibia.

**Localities:** Chikomwe Hill, *Chapman JD & Chapman EG 7542* (FHO).

***Combretum fragrans* F.Hoffm.**

Deciduous tree, up to 10 m high with drooping branches. Leaves in whorls of 3, coriaceous, tomentose at least on the lower surface.

**Habitat:** Miombo woodland. **Altitude:** c. 900 m. **Occurrence:** Fairly common. **Distribution:** Widespread in tropical Africa.

**Localities:** Mchese Mt., near Nampende Stream, *Chapman JD & Chapman EG 9163* (FHO).

***Combretum imberbe* Wawra**

Tree, up to 15 m high, sometimes more. Light grey bark. Leaves silvery. Flowers yellowish, in terminal spikes. Fruits silvery.

**Habitat:** Low altitude, open streambank. **Altitude:** c. 800 m. **Distribution:** From Tanzania to South Africa (Transvaal), Namibia and Angola.

**Localities:** Phalombe River, *Chapman JD & Chapman EG 7896* (FHO).

***Combretum molle* R.Br. ex G.Don**

Semi-deciduous tree, up to 12 m high. Leaves velvety to the touch, especially when young. Flowers in axillary spike, greenish-yellow, fragrant. Fruits subcircular to elliptic, metallic yellow.

**Flowering:** September-October. **Fruiting:** February-June. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1100 m. **Occurrence:** Common. **Distribution:** Widespread throughout tropical Africa and South Africa.

**Localities:** Mchese Mt., Najira Stream above N.A. Mkumbas, *Chapman JD 584* (FHO). Above Esperanza, on the Pamba Stream, *Chapman JD & Chapman EG 6706* (FHO). Likabula River, near the forestry depot, *Chapman JD & Chapman EG 7163* (FHO). Likabula Valley, *Chapman JD & Chapman EG 7450* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 8052* (FHO). Mchese Mt., near Nampende Stream, *Chapman JD & Chapman EG 9165* (FHO).



***Combretum paniculatum* Vent.**

Canopy liane, with paired hooks (woody petiole bases). Leaves opposite, large, oblong-elliptic. Flowers red. Fruits subcircular, yellowish-brown.

**Flowering:** August-October. **Fruiting:** August onwards. **Habitat:** Evergreen forest, often near streams. **Altitude:** 550-1150 m. **Distribution:** From Senegal eastwards; East Africa to Mozambique and Angola.

**Localities:** Big Ruu Gorge, *Chapman JD 426* (FHO). Mulosa Stream, below the Crater, *Chapman JD 6513* (FHO). Entrance to the Mulosa Gorge, *Chapman JD 6526* (FHO). Nkolu Stream, just above Lauderdale, *Chapman JD & Chapman EG 6720* (FHO). Linji Stream, between Likabula & Mt. Zion, *Chapman JD & Chapman EG 7044* (FHO). Likabula Valley, Nasato Stream, *Chapman JD & Chapman EG 7452* (FHO). Esperanza, *Chapman JD & Chapman EG 7997* (FHO).

***Combretum zeyheri* Sond.**

Deciduous tree, up to 10 m high, with drooping branches. Leaves opposite or 3-whorled. Flowers yellow. Fruits 4-winged, sub-circular, large, (up to 5.5 cm long × 5.0 cm wide), yellowish-green.

**Fruiting:** June-July. **Habitat:** *Brachystegia* woodland. **Altitude:** 600-850 m. **Distribution:** D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa, Namibia and Angola.

**Localities:** Mchese Mt., near Nandiwo & Nampende, *Chapman JD 619* (FHO). Likabula Valley, close to the Likabula Stream, *Chapman JD & Chapman EG 7734* (FHO). Chitagoni Hill, just north of the Eldorado, *Chapman JD & Chapman EG 8458* (FHO).

***Pteleopsis myrtifolia* (Laws.) Engl. & Diels**

Deciduous tree, up to 27 m high, with drooping branches. Leaves dark green, veins below pubescent, orange. Flowers white or yellow, slightly fragrant. Fruits usually 2-winged, narrowing slightly towards the base.

**Flowering:** December. **Fruiting:** December-July. **Habitat:** *Brachystegia* woodland, edge of stream-fringing forest. **Altitude:** 600-950 m. **Occurrence:** Common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Angola.

**Localities:** Near Mulosa Stream, *Chapman JD 354* (FHO). Mchese Mt., Nampende Stream, *Chapman JD 598* (FHO). Above Esperanza, along the Pamba Stream, *Chapman JD 6658* (FHO). Boma Path, *Chapman JD & Chapman EG 6824* (FHO). Chitakali, *Chapman JD & Chapman EG 6960* (FHO). Near the bridge on the Likabula-Phalombe road, *Chapman JD & Patel IH 5800* (FHO).

***Terminalia stenostachya* Engl. & Diels**

Tree, up to 12 m high. Leaves spirally arranged, slightly bullate above, orange-brown tomentose below. Flowers cream. Fruits dark red.

**Fruiting:** July. **Habitat:** Dry *Brachystegia* woodland. **Altitude:** 750-950 m. **Occurrence:** Sporadic. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Beside N.E. corner beacon of the Likulezi Estate, *Chapman JD 554* (FHO). Well down the western slopes of Mchese Mt., *Chapman JD & Chapman EG 8657* (FHO).

***Terminalia ? trichopoda* Diels**

Deciduous tree, up to 15 m high. Leaves bunched towards stem apex, obovate, brown-tomentose below.

**Habitat:** Woodland. **Altitude:** c. 600 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Botswana.

**Localities:** Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8390* (FHO).

**COMMELINACEAE**

***Aneilema aequinoctiale* (P.Beauv.) Kunth**

Decumbent herb, rooting at the nodes. Sticky, hairy stems. Flowers yellow.

**Flowering:** March, June, October. **Habitat:** Open evergreen forest, forest edge. **Altitude:** 600-900 m. **Distribution:** Throughout tropical Africa from Guinea and Ethiopia to South Africa (Transvaal, KwaZulu-Natal, Transkei) and Swaziland.

**Localities:** Great Ruu Gorge, between the hydroelectric station and the dam, *Brummitt RK & Banda EA 9203* (K). Entrance to Crater Gorge, above Lauderdale, *Chapman JD 6593* (FHO). Ruu River, Ruu, Mulanje tea belt, *Chapman JD & Chapman EG 7470* (MO).

***Commelina africana* L.**

Creeping herb. Flowers yellow.

**Flowering:** March. **Habitat:** Pathside. **Altitude:** c. 1500 m. **Occurrence:** Locally common. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Likabula- Chambe path, *Chapman JD 548* (K).

***Commelina bracteosa* Hassk.**

Semi-procumbent herb.

**Habitat:** Beside path in cultivation. **Altitude:** c. 600 m. **Distribution:** At present, known from Malawi and Zimbabwe.

**Localities:** Mt. Mulanje foot, close to the Malawi Tea Factory, *Chapman JD & Chapman EG 8294* (MO).

***Commelina subulata* Roth**

Herb. Stems rooting at lower nodes. Flowers pale pinkish-purple.

**Flowering:** April. **Habitat:** On wet rocks in *Brachystegia* woodland. **Altitude:** c. 1200 m. **Distribution:** Widespread in tropical Africa; northern parts of South Africa.

**Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9903* (K).

***Cyanotis barbata* D.Don**

Herb, up to 35 cm high. Stem and leaves softly hairy. Leaves with sheathing bases. Flowers mid-blue.

**Flowering:** February-August. **Habitat:** Short grassland, rocky hillsides, disturbed ground. **Altitude:** 1800-2200 m. **Distribution:** Probably the eastern side of Africa; definitely known from Ethiopia, Kenya, Malawi and Zimbabwe. **Localities:** Just above Thuchila Hut, *Brummitt RK 9686* (K). N.W. slopes of Ruo Basin, *Brummitt RK 9713* (K). Lichenya Plateau, *Chapman JD 485* (K). Lichenya Plateau, *Hepper FN 7349* (K). Lichenya plateau, by the Forestry Hut, *Strugnell AM & Salubeni AJ 31* (FHO).

*Cyanotis lanata* Benth.

Semi-prostrate herb forming mats, up to 1 m wide. Flowers small, purple.

**Flowering:** April. **Habitat:** Shallow concavities in smooth rocks, just above the river. **Altitude:** c. 1000 m. **Distribution:** Widespread in the warmer parts of Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9035* (FHO).

*Murdannia simplex* (Vahl) Brenan

Herb, up to 60 cm high when flowering. Forms clumps. Flowers blue.

**Flowering:** March. **Habitat:** Damp areas at high altitudes. **Distribution:** Widespread in tropical and subtropical Africa.

**Localities:** Chambe plateau, *Chapman JD 557* (K).

CONNARACEAE

*Agelaea pentagyna* (Lam.) Baill.

Woody climber with large, trifoliate leaves. Fruit follicles almost pear-shaped, reddish-orange, seeds purplish-black.

**Fruiting:** November. **Habitat:** Edge of stream-fringing forest. **Altitude:** 850-1100 m. **Distribution:** Uganda, Kenya, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Above Esperanza, *Chapman JD & Chapman EG 6711* (FHO). Just above the Chitakali boundary, *Chapman JD & Chapman EG 6805* (FHO).

*Rourea orientalis* Baill.

Syn. *Byrsocarpus orientalis* (Baill.) Baker

Shrub, small tree or woody climber, up to 7 m high. 8-16 pairs of leaflets, mucronate. Flowers creamy-white, sweetly scented. Fruits pendant, red.

**Flowering:** October. **Fruiting:** November-January. **Habitat:** *Brachystegia* woodland, edge of riparian forest, rocky grassland, waste ground. **Altitude:** 700-1250 m. **Distribution:** D.R. Congo, Kenya, Tanzania southwards to Mozambique, Botswana and Angola.

**Localities:** Below Chambe Peak, *Chapman JD & Chapman EG 7049* (FHO). Lower slopes of Mchese Mt., in the Fort Lister Gap, *Chapman JD & Chapman EG 8572* (FHO). Low down the Likabula Valley, *Chapman JD & Chapman EG 8924* (FHO). Limbuli, *Chapman JD & Chapman EG 9359* (FHO).

CONVOLVULACEAE

*Hewittia scandens* (Milne) Mabb.

Syn. *Hewittia malabarica* (L.) Suresh

Twining herb, up to 3m high. Corolla pale yellow, centre deep red.

**Flowering:** July. **Habitat:** Weed of cultivation. **Altitude:** c. 750 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Bottom of Little Ruo path, *Brummitt RK 12360* (K).

*Ipomoea alpina* Rendle

Erect herb, up to 1.7 m high. Bristly-pilose with orange hairs. Flowers solitary, pale orange-yellow.

**Flowering:** February. **Habitat:** Grassland with scattered *Proteas*. **Altitude:** c. 1800 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Chambe Plateau, top of the skyline path, *Blackmore S et al. 425* (K).

*Ipomoea fulvicaulis* (Choisy) Hallier f.

var. *asperifolia* (Hallier f.) Verdc.

Herbaceous twiner. Leaves narrowly oblong to ovate; short, stiff, yellowish hairs on both surfaces. Bracts linear. Flowers purplish-mauve.

**Flowering:** February. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1040 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Lower part of Lichenya path, *Brummitt RK & Polhill RM 15964* (K).

*Ipomoea fulvicaulis* (Choisy) Hallier f.

var. *fulvicaulis*

Herbaceous twiner. Leaves densely pubescent. Bracts ovate, acuminate. Flowers mauve.

**Habitat:** Woodland. **Distribution:** Ethiopia, D.R. Congo and Kenya southwards to Mozambique and N. Botswana.

**Localities:** Mt. Mulanje, *Whyte A s.n.* (BM).

*Ipomoea fulvicaulis* (Choisy) Hallier f.

var. *heterocalyx* (Schulze-Menz) Verdc.

Herbaceous climber up to 1.5 m high. Leaves narrowly oblong, pubescent to glabrescent. Bracts lanceolate. Flowers mauve.

**Fruiting:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9894* (K).

*Ipomoea hederifolia* L.

Herbaceous twiner, up to 1 m high. Leaves 'ivy-shaped'. Flowers scarlet.

**Flowering:** May. **Habitat:** Weed of cultivation. **Altitude:** c. 1500 m. **Distribution:** Naturalised in East Africa, Zambia,



Malawi, Mozambique and Zimbabwe. **Comments:** Native of tropical America.

**Localities:** Likabula River, above Likabula House, Blackmore S et al. 1470 (K).

***Ipomoea involucrata* P.Beauv.**

var. *operosa* (C.H.Wright) Hallier f. ex Verdc.

Herbaceous twiner reaching up to 4 m high. Whole plant densely, softly hairy. Inflorescence many-flowered, subtended by a boat-shaped involucre. Flowers pale purple with a deep purple throat.

**Flowering:** July-August. **Habitat:** Shrubberies or forest edge. **Altitude:** 1400-1700 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique.

**Localities:** Mchese Mt., Napolo valley, Chapman JD & Chapman EG 8716 (FHO). Mchese Mt., Nampende Valley, Chapman JD & Chapman EG 9250 (FHO).

***Ipomoea lapathifolia* Hallier f. var. *lapathifolia***

Herbaceous twiner, up to 3 m. Flowers metallic-mauve, in dense inflorescences.

**Flowering:** February. **Habitat:** Amongst grass in *Brachystegia* woodland. **Altitude:** c. 1050 m. **Distribution:** D.R. Congo, East Africa, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal, N. KwaZulu-Natal) and Swaziland.

**Localities:** Lower part of Lichenya path, Brummitt RK & Polhill RM 15961 (K).

***Ipomoea pileata* Roxb.**

Herbaceous, pubescent twiner. Similar to *Ipomoea involucrata* but flowers smaller, corolla tube very narrow at the base and sepals obtuse.

**Flowering:** March. **Habitat:** Thickets on shady river bank. **Altitude:** c. 900 m. **Distribution:** Gambia, D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal), Angola and the Mascarene Islands.

**Localities:** Likabula Valley, Chapman JD & Chapman EG 9510 (FHO).

***Ipomoea verbascoidea* Choisy**

Twining, woody climber. Leaves and stems covered with a yellowish-white tomentum. Flowers rose-purple. Fruit capsules globose, brown, with strongly reflexed sepals. Dehiscent fruit looks like a cotton ball.

**Flowering:** May. **Habitat:** Rocky crag by river in woodland. **Altitude:** c. 900 m. **Distribution:** Sudan and Uganda southwards to Mozambique, N. Botswana, Namibia and Angola.

**Localities:** Likulezi River Gorge, Chapman JD & Chapman EG 7642 (FHO).

***Paralepistemon shirensis* (Oliv.) Lejoly & Lisowski**

Robust, woody climber. White latex present. Leaves cordate. Stems and leaves shortly pubescent. Flowers white. Fruit capsule indehiscent,

broadly ellipsoid, indented and beaked at apex.

Sepals persistent, purplish outside.

**Fruiting:** June. **Habitat:** Disturbed woodland. **Distribution:** D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Angola.

**Localities:** At the base of Chikomwe Hill, Chapman JD & Chapman EG 7716 (FHO).

***Turbina stenosiphon* (Hallier f.) Meeuse**

Syn. *Ipomoea stenosiphon* Hallier f.

Twining, woody climber. Stems very smooth and grey. Leaves cordate, falling when the fruits are ripe. Flowers white, very slender corolla tube. Fruit capsules ellipsoid, brown, tipped by the persistent style and surrounded by persistent sepals.

**Fruiting:** June-July. **Habitat:** Amongst rocks on open river banks. **Altitude:** c. 1100 m. **Distribution:** Tropical Africa and South Africa.

**Localities:** Western slope of Mchese Mt, Chapman JD & Chapman EG 8664 (FHO). Mchese Mt., Nabwato Valley, Chapman JD & Chapman EG 9129 (FHO).

## CORNACEAE

***Cornus volkensii* Harms**

Tree, up to 35 m high. Leaves elliptic to lanceolate. Dioecious flowers in dense terminal inflorescences. Fruits an ellipsoid drupe.

**Habitat:** Evergreen forest, characteristic tree along stream-banks. **Altitude:** 1700-2000 m. **Occurrence:** Common.

**Distribution:** D.R. Congo, Rwanda, Burundi, East Africa, Malawi, Mozambique and Zimbabwe.

**Localities:** Phalombe Gorge, Chapman JD & Chapman EG 7971 (FHO). Well above Madzeka Hut on the Sombani path, Chapman JD & Chapman EG 8374 (FHO). Western side of Mchese Mt., high up the Napolo Valley, Chapman JD & Chapman EG 8694 (FHO). Mchese Mt., Nampende Valley, Chapman JD & Chapman EG 9140 (FHO).

## CRASSULACEAE

***Crassula alsinoides* (Hook.f.) Engl.**

Weak-stemmed, semi-trailing, slightly succulent herb. Flowers small, white.

**Flowering:** December. **Habitat:** Forest. **Altitude:** c. 1700 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Lichenya Plateau, along the Lichenya River, Chapman JD & Chapman EG 9456 (FHO).

***Crassula globularioides* Britten**

forma *globularioides*

Herb or dwarf sub-shrub, usually up to about 10 cm when flowering, sometimes longer and trailing. Leaves usually in basal rosette, oblong

to subcircular-obovate, glabrous, ciliate margins.

Flowers white or pale pink, sepals ciliate.

**Flowering:** May-September. **Habitat:** Bare rocks in plateaux grassland or in forest. **Altitude:** c. 1950-2450 m. **Occurrence:** Widespread. **Distribution:** Kenya, Tanzania and Malawi.

**Localities:** Near Litakala, Sombani, *Chapman JD & Chapman EG 8789* (FHO). Manene Peak, *Chapman JD & Patel IH 5795* (FHO). Lichenya Plateau, just off the path from the Lichenya Hut to the C.C.A.P. Hut, *Strugnell AM 17* (FHO). Ruo Basin, on the approach to Chinzama Hut from Sombani, *Strugnell AM 88* (FHO).

### *Crassula globularioides* Britten

forma *pilosa* R.Fern.

Similar to var. *globularioides* but hairy on the lower leaf surface.

**Flowering:** July. **Habitat:** Rock faces. **Altitude:** c. 1200 m. **Occurrence:** Local. **Distribution:** Endemic to Mt. Mulanje. **Localities:** West face of Great Ruo Gorge, *Newman EI & Whitmore TC 631* (BM).

### *Crassula sarcocaulis* Eckl. & Zeyh.

ssp. *rupicola* Tölken var. *mlanjiana* R.Fern.

Dwarf, much-branched, succulent shrub, up to 90 cm high. Leaves small, linear, inrolled at margins, bunched towards stem apex. Flowers white.

**Flowering:** May-February. **Habitat:** Montane grassland, among rocks. **Altitude:** 1950-2300 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Sapitwa, path to summit, *Blackmore S et al. 416* (K). Thuchila-Ruo path, *Chapman JD 420* (FHO). Namisili, *Chapman JD & Patel IH 5784* (K). West Peak, *Richards HM 16602* (K).

### *Crassula schimperi* Fisch. & Mey.

ssp. *transvaalensis* (Kuntze) R.Fern.

var. *denticulata* (Brenan) R.Fern.

Straggling, erect or prostrate, moss-like herb, not rooting at the nodes. All parts of the plant reddish. Leaves lanceolate with a short, apical point. Flowers white or dull pink; the reddish-brown calyx longer than the corolla.

**Flowering:** January, June. **Habitat:** On rock slabs in grassland or on shaded banks. **Altitude:** 1300-2200m. **Occurrence:** Locally common. **Distribution:** Malawi.

**Localities:** Likabula Valley, along the Chapaluka track, *Chapman JD & Chapman EG 7106* (FHO).

### *Crassula vaginata* Eckl. & Zeyh.

Succulent herb, up to 90 cm high, forming clumps. Leaves linear-lanceolate clasping the stem, ciliate on margin. Flowers white.

**Flowering:** April-June. **Habitat:** In moss among rocks. **Altitude:** c. 2200 m. **Distribution:** Cameroon, Ethiopia and Sudan southwards to South Africa (Transvaal, KwaZulu-Natal, Orange Free State and N.E. Cape), Swaziland and Angola.

**Localities:** Near top of the path from Thuchila to Ruo Basin, *Brummitt RK 9702* (K). Cilemba Peak, *Richards HM 16575* (K).

### *Kalanchoe elizae* Berger

Succulent, glabrous herb, up to 1.8 m high when flowering. Leaves broadly ovate or suborbicular. Flowers orange-yellow to red, in much-branched inflorescences.

**Flowering:** August-February. **Habitat:** On sloping sheet rock. **Altitude:** 1200-1500 m. **Distribution:** Malawi and Mozambique.

**Localities:** Chiphalombe Stream, *Chapman JD & Chapman EG 7886* (MO). Mchese Mt., at the Namajani Stream, *Chapman JD & Chapman EG 8816* (FHO). Likabula to Lichenya path, *Chapman JD & Tawakali EJ 5523* (FHO).

### *Kalanchoe lanceolata* (Forssk.) Pers.

Succulent, viscid herb, up to 1.5 m high when flowering. Stem squarish, slightly winged. Leaves obovate to linear lanceolate. Flowers pale yellow or pink.

**Flowering:** May. **Habitat:** On rocks. **Altitude:** c. 1350 m. **Distribution:** Eastern Africa from Ethiopia and Somalia to South Africa (Transvaal); western Africa from Mali and Ghana to Namibia.

**Localities:** Below the Chambe cliffs, *Chapman JD & Chapman EG 7612* (MO).

### *Kalanchoe lateritia* Engl.

Succulent herb, up to 50 cm or more when flowering. Leaves glabrous, ovate to spatulate. Flowers yellow to orange.

**Flowering:** June-August. **Habitat:** On rocks in grassland, *Brachystegia* woodland or evergreen forest. **Altitude:** c. 850 m. **Distribution:** D.R. Congo, Rwanda, Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8637* (FHO).

### *Kalanchoe latisepala* N.E.Br.

Semi-shrubby, succulent perennial, up to 1 m high. Leaves usually sessile and clasping the stem, irregularly crenate margin. Flowers white, in dense, terminal inflorescence.

**Flowering:** June. **Habitat:** Rock slabs. **Altitude:** c. 1700 m. **Occurrence:** Locally abundant. **Distribution:** Malawi and Mozambique.

**Localities:** Foot of cliffs, Chambe West Face Shelf, *Chapman JD & Chapman EG 8565* (FHO).

## CUCURBITACEAE

### *Coccinea grandiflora* Cogn.

Soft-stemmed climber. Tendrils bi-fid, opposite the leaves. Leaves large, vine-like, 3-5-lobed. Fruits ellipsoid, glabrous.



**Fruiting:** May. **Habitat:** Riparian forest. **Altitude:** c. 950 m. **Distribution:** Tanzania, Malawi and Mozambique. **Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9113* (FHO).

*Diplocyclos decipiens* (Hook.f.) C.Jeffrey  
Scrambling, slender-stemmed herb, with fine, bi-fid tendrils. Leaves much dissected, glabrous. Flowers pale yellow. Fruits red with lines of white spots, more or less heart-shaped.

**Fruiting:** May. **Habitat:** Exposed rocks, stream-fringing forest. **Altitude:** c. 900 m. **Occurrence:** Locally fairly common. **Distribution:** D.R. Congo, S. Tanzania, Zambia, Malawi and Angola.

**Localities:** Mchese Mt., Nandiwo Stream, *Chapman JD & Chapman EG 9073* (FHO).

*Mormordica boivinii* Baill.

Herbaceous climber, up to 7.5 m long. Simple tendrils. Leaves ovate, broadly cordate. Flowers yellow-orange. Fruits green striped with cream, becoming yellow.

**Altitude:** c. 750 m. **Distribution:** Eastern Africa from Ethiopia to South Africa (Transvaal, KwaZulu-Natal). **Localities:** Esperanza, *Chapman JD & Chapman EG 8388* (K).

*Peponium chirindense* (Baker f.) Cogn.

Herbaceous climber, up to 10 m high. Tendrils present. Leaves palmately lobed and cordate. Flowers yellow, in racemes. Fruit oblong, tapering towards apex, green with paler markings.

**Flowering:** November. **Fruiting:** November. **Habitat:** Forest by streams. **Altitude:** c. 950 m. **Distribution:** Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Chitakali Stream at the Boma Path, *Chapman JD & Chapman EG 6845* (FHO).

*Zehneria scabra* (L.f.) Sond.

Herbaceous climber. Leaves dark green, cordate to truncate at the base. Flowers dioecious, white becoming yellowish. Fruit globose to ellipsoid, red when ripe.

**Flowering:** March. **Fruiting:** June. **Habitat:** Rocky hill-sides in montane grassland, edge of woodland. **Altitude:** c. 2100 m. **Distribution:** Tropical Africa and South Africa.

**Localities:** Chambe Plateau, above the Forestry Hut, *Blackmore S 727* (K). Near top of the path from Thuchila Hut to the head of the Ruo Basin, *Brummitt RK 9692* (K). Chambe Basin Ridge, *Richards HM 16691* (K).

*Zehneria thwaitesii* (Schweinf.) C.Jeffrey

Herbaceous climber, sparsely pilose. Leaves weakly cordate, or sagittate, at base. Flowers monoecious, white. Fruits cigar-shaped, red.

**Flowering:** June. **Habitat:** Edge of woodland. **Altitude:** c. 800 m. **Distribution:** Tropical Africa.

**Localities:** Great Ruo Gorge, *Richards HM 16765* (K).

## CUPRESSACEAE

*Refs.* Chapman, 1994, 1995; Pauw & Linder, 1997.

*Widdringtonia nodiflora* (L.) Powrie

Multi-stemmed shrub, up to 4.5 m high, bearing juvenile and adult leaves. Thin bark.

**Habitat:** Ericaceous thicket and shrubberies prone to burning, among rocks or in crevices. **Altitude:** 1750-2590 m.

**Distribution:** From the mountains of Mulanje and Zomba in Malawi, Gorongosa in Mozambique, Inyangani and Chimanimani in Zimbabwe, and the Transvaal to the Cape in South Africa. **Comments:** Coppices after fire from a swollen, subterranean base. If protected from fire, may be a single-stemmed tree, up to 10 m but this is rare and the trees usually show signs of coppicing at the base.

**Localities:** Phalombe Gorge, on the steep West Face, *Chapman JD & Chapman EG 7957* (FHO). West Peak, *Chapman JD & Chapman EG 8151* (FHO). Headwaters of the Mulosa river, below Naikoto, *Chapman JD & Chapman EG 8797* (FHO). Chisepo, near the hut at the start of the climb up Sapitwa from the Thuchila-Chambe path, *Chapman JD & Patel IH 5691* (FHO).

*Widdringtonia whytei* Rendle

Tree, up to 30-40 m high with a wide crown.

Bark reddish-grey, thick, soft and fibrous.

**Habitat:** Evergreen forest. **Altitude:** 1700-2140 m.

**Distribution:** Endemic to Mt. Mulanje. **Comments:** Does not coppice after fire. Regenerates in thickets. The timber is strongly aromatic, very durable and insect-proof. It is now listed as an endangered species.

**Localities:** Phalombe Gorge, *Chapman JD & Chapman EG 7822* (FHO). Chinzama, Upper Ruo Basin, *Chapman JD & Patel IH 5687 & 5688* (FHO).

## CUSCUTACEAE

*Cuscuta kilimanjari* Oliv. var. *kilimanjari*

Parasitic twining herb, up to 7 m high. Flowers large, funnel-shaped, cream, in loose inflorescences.

**Flowering:** June. **Habitat:** On various host plants but often Acanthaceous shrubs. In or at the edge of forest. **Altitude:** 1000-1950 m. **Distribution:** Throughout eastern Africa to South Africa.

**Localities:** Likulezi River Gorge, *Chapman JD & Chapman EG 7690* (FHO). Mchese Mt., path from the Fort Lister Gap, *Iwarsson M & Ryding O 820* (K). Chambe Basin Ridge, Likulezi side, *Richards HM 16683* (K).

## CYPERACEAE

*Refs.* Durand & Schinz, 1895; Haines & Lye, 1983; Kativu, 1994a; Kükenthal, 1936; Lye, 1983 a & b; Muasya & Simpson, 2002; Raynal, 1972.

*Ascolepis capensis* (Kunth) Ridl.

Tufted, perennial sedge, up to 70 cm high when flowering. Leaves rolled and thread-like when



dry. Inflorescence a very rounded, compressed, white head subtended by 1-3 leaf-like bracts, up to 12 cm long.

**Flowering:** December. **Habitat:** Seasonally waterlogged grassland. **Altitude:** c. 1950 m. **Occurrence:** Locally gregarious. **Distribution:** Widespread in tropical Africa from Mali and Sierra Leone to Ethiopia and south to South Africa.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 8286* (K).

***Bulbostylis filamentosa*** (Vahl) C.B.Clarke

Perennial sedge, up to 70 cm high when flowering. Leaves narrow, rough. Inflorescence a dense head, black.

**Flowering:** May-June. **Habitat:** Montane grassland and rocky slopes. **Altitude:** 1800-2000 m. **Distribution:** West tropical Africa from Sierra Leone to Angola; East Africa, Malawi and South Africa.

**Localities:** Near top of path up to Sombani Basin from the Fort Lister Gap, *Brummitt RK 11305* (K). Lichenya Plateau, Ma Brown's Cottage, *Wild H 6164* (K).

***Bulbostylis macra*** (Ridl.) C.B.Clarke

Small, tufted perennial sedge, up to 35 cm high when flowering. Numerous, filiform leaves. Inflorescence a solitary, terminal spikelet, light reddish-brown.

**Habitat:** Miombo woodland. **Altitude:** c. 950 m. **Distribution:** S. Tanzania and Malawi.

**Localities:** Western slopes of Mchese Mountain, near Bwaibwai Forest village, *Chapman JD & Chapman EG 8918* (FHO).

***Bulbostylis oritrephes*** (Ridl.) C.B.Clarke

Dainty perennial sedge, up to 40 cm high when flowering. Culms grow in rows from a horizontal rhizome. Leaves very fine. Inflorescence 1-3 spikelets, dark reddish-brown with white feathery stigmas.

**Flowering:** June-September. **Habitat:** Montane grassland, in relatively bare ground. **Altitude:** 1850-2100 m. **Occurrence:** Sporadic. **Distribution:** Uganda, Kenya, Tanzania, Malawi and South Africa.

**Localities:** Lichenya Plateau, *Robinson EA 5274* (K). On Sombani-Chinzama path about 1/2 mile from Sombani hut below Namisili Peak, *Strugnell AM et al. 69* (FHO).

***Bulbostylis* sp.**

Tufted sedge, up to about 15 cm when flowering. Very fine leaves, hairy on the margins. Inflorescences small, congested, brown.

**Habitat:** Bare soil in fire traces. **Altitude:** c. 1900 m. **Localities:** Linji Plateau, *Chapman JD 6072* (FHO).

***Carex brassii*** Nelves

Erect, perennial sedge forming clumps, up to 1.2 m high when flowering. Inflorescence 30 cm long.

**Flowering:** May-September. **Habitat:** Forest floor, river banks and beds, bogs. **Altitude:** 1000-2100 m. **Occurrence:** Scattered but locally common. **Distribution:** Malawi (The Nyika, Rumph District, Mt. Mulanje).

**Localities:** Chiphalombe Shelf, *Chapman JD 617* (K). Ruo Gorge, *Müller T 1476* (K). Lichenya Plateau, *Robinson EA 5266* (K). Great Ruo Gorge, *Robinson EA 5375* (K).

***Carex chlorosaccus*** C.B.Clarke

Tufted, leafy perennial sedge, often with a cluster of culms up to 1.2 m. Leaf blades up to 9 mm wide, flat or pleated. Inflorescence slender, much-branched. Spikelets pale brown.

**Flowering:** July. **Habitat:** Mossy, damp streambanks in forest. **Distribution:** Ethiopia, Sudan, E. D.R. Congo, Rwanda, Uganda, Kenya, Tanzania and Malawi.

**Localities:** Near Thuchila cottage, *Jackson G 1999* (K).

***Carex cyrtosaccus*** C.B.Clarke

Densely-tufted perennial sedge forming sizable clumps, up to 1.5 m high when flowering. Base of culms covered by purple-spotted leaf sheaths. Inflorescence of 10-24 thick spikelets arising in pairs, reddish-brown.

**Flowering:** November. **Habitat:** Montane forest. **Altitude:** c. 2000 m. **Distribution:** Tanzania and Malawi.

**Localities:** Lichenya Plateau, near the C.C.A.P. hut, *Chapman JD & Chapman EG 8276* (K).

***Carex echinochloa*** Kunze

ssp. *nyasensis* (C.B.Clarke) Lye

Syn. *Carex nyasensis* C.B.Clarke

Drooping, clump-forming sedge, up to 1.2 m high.

**Flowering:** June-November. **Fruiting:** December. **Habitat:** Evergreen forest, forest edges and hillside with bracken. **Altitude:** 900-2100 m. **Occurrence:** Common. Rest House, *Chapman JD & Chapman EG 9461* (FHO). **Distribution:** Kenya, Tanzania, Malawi and Zimbabwe.

**Localities:** Foot of great Ruo Gorge, between the hydro-electric station and the dam, *Brummitt RK & Banda EA 9218* (K). 2 km south of Thuchila hut, *Brummitt RK 9764* (K). Edge of Sombani Basin, at N.E. foot of Matambale, *Brummitt RK 11341* (K). Lower slopes of Cilemba Peak, above C.C.A.P. cottage, *Chapman JD 6067* (FHO). West branch of the Chitakali Stream, near the Boma Path, *Chapman JD & Chapman EG 6879* (FHO). Ruo Gorge, *Chapman JD & Chapman EG 8308* (MO). Path from Fort Lister Forestry Office to Sombani, *Chapman JD & Chapman EG 8355* (K). Lichenya Plateau, close to the Forestry Rest House, *Chapman JD & Chapman EG 9460* (MO). Lichenya Plateau along the Lichenya River below the Forestry.

***Carex macrophyllidion*** Nelves

Densely tufted perennial sedge, up to 60 cm high when flowering. Inflorescence an interrupted panicle, secondary dense panicles from each of the upper leaf sheaths. Light reddish-brown.



**Flowering:** December. **Fruiting:** March-May. **Habitat:** Pathsides in montane grassland and edges of streamside forest. **Altitude:** 1100-1990 m. **Distribution:** Tanzania, Zambia, Malawi and Angola.

**Localities:** Lichenya Plateau, *Chapman JD 5654* (FHO). Linji Plateau, *Chapman JD 6083* (FHO). Foot of Likabula Valley, Nasato Stream, *Chapman JD & Chapman EG 7304* (FHO).

*Carex zuluensis* C.B. Clarke

var. *glaberrima* Kük.

Sedge.

**Habitat:** Open montane grassland. **Altitude:** c. 2100 m. **Distribution:** Malawi, South Africa (Northern Provinces, KwaZulu-Natal), as far as is known. **Comments:** Only one collection seen.

**Localities:** Lichenya Plateau, *Brass LJ 16869* (K).

*Carex* sp.

Clump-forming sedge.

**Habitat:** In forest and on stream banks. **Altitude:** 1750-2150 m.

**Localities:** Path to Sombani from Fort Lister Forestry Office, *Chapman JD & Chapman EG 8355* (MO). Big Ruu Basin, *Chapman JD & Chapman EG 9377* (FHO).

*Coleochloa pallidior* Nelves

Tufted, perennial sedge, up to 70 cm high. Leaves flattish above, wider (2.5–4.5 mm) than those of *C. setifera* and usually hairy on both surfaces. Inflorescence a lax panicle.

**Habitat:** On rocks, in crevices or on bare hill-slopes. **Altitude:** c. 1100 m. **Distribution:** Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** West slope of the Great Ruu Gorge, *Robinson EA 5376* (K, MAL, SRGH).

*Coleochloa setifera* (Ridl.) Gilly

Densely tufted perennial sedge, up to 70 cm high. Leaves often tightly rolled, 0.5-2.5 mm wide when flattened out; upper surface glabrous, lower surface densely hairy. Inflorescence lax, slender, erect, mid to dark reddish-brown.

**Flowering:** August-February. **Habitat:** Rock faces and crags, rock pavements and rocky pathsides, often near water. **Altitude:** 900-2200 m. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa, and Madagascar.

**Localities:** Lichenya-Likabula Saddle, *Chapman JD 5681* (FHO). Little Mulosa River, Crater Gorge, *Chapman JD & Chapman EG 8091* (K). Likabula Stream, above Chisambo, *Chapman JD & Chapman EG 8112* (K). Start of the climb to West Chambe Face Shelf, *Chapman JD & Chapman EG 8569* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9027* (MO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9470* (FHO). Likabula Valley, Munye Munye crossing, *Chapman JD & Chapman EG 9478* (FHO). Ruu Basin, on the hill opposite Chinzama hut, *Strugnell AM 89* (FHO).

*Coleochloa virgata* (K.Schum.) Nelves

Large, tufted sedge, up to 85 cm high. Leaves densely, minutely hairy above, lower surface glabrous. Inflorescence a dense interrupted panicle of clustered, sessile spikelets, dark reddish-brown.

**Flowering:** May-August. **Habitat:** In scrubby grassland. **Altitude:** c. 2100 m. **Distribution:** Tanzania (Mt. Meru) and Malawi (Mt. Mulanje).

**Localities:** Sombani Plateau edge, near Litakala Peak, *Chapman JD & Chapman EG 8761* (FHO).

*Costularia natalensis* C.B. Clarke

Large sedge forming clumps, up to 1.8 m high when flowering.

**Flowering:** February. **Habitat:** Montane grassland. **Altitude:** 1800-2000 m. **Occurrence:** Occasional. **Distribution:** Malawi and South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Chambe Plateau, *Blackmore S et al. 393* (K). From Madzeka Hut on the ascent going towards Sombani Hut, *Chapman JD & Chapman EG 8367* (MO). Lichenya Plateau, *Chapman JD & Tawakali EJ 5529* (FHO).

*Cyperus alternifolius* L.

Robust, clump-forming sedge, up to 1.5 m high when flowering. Culm leafless. Inflorescence subtended by numerous leafy, involucre bracts up to 35 cm long. Dense spikes, light to mid-brown.

**Flowering:** July. **Habitat:** River banks and grassland. **Altitude:** c. 850 m. **Occurrence:** Local and gregarious. **Distribution:** Uganda, Kenya, Tanzania and Malawi.

**Localities:** Phalombe River, *Chapman JD & Chapman EG 7848* (FHO).

*Cyperus angolensis* Boeck.

Stoloniferous perennial sedge, up to about 60 cm high when flowering. Leaves basal. Culms solitary from swollen stem base. Inflorescence globose, sessile spikelets only, creamy-white, subtended by 3 or 4 leafy bracts.

**Flowering:** November. **Habitat:** Montane grassland in gravelly soil. **Distribution:** Uganda, Tanzania, Malawi and Angola.

**Localities:** Sombani Basin, near the forestry hut, *Blackmore S & Kupicha FK 1026* (K). Mt. Mulanje, *Whyte A s.n.* (K).

*Cyperus cyperoides* (L.) Kuntze ssp. *flavus* Lye  
Syn. *Cyperus subumbellatus* Kük.; *Mariscus cylindristachyus* Steud.

Perennial sedge, up to 70 cm high when flowering. Leaf sheath dark purple near base. Umbel-like inflorescence, subtended by several leafy bracts, up to 25 cm long, peduncles of varying length. Dense, short spikes, golden yellow, turning brown when ripe.

**Flowering:** January. **Habitat:** In broken shade of riparian transition woodland. **Altitude:** c. 800 m. **Occurrence:** Locally common. **Distribution:** Uganda, Kenya, Tanzania and Malawi.

**Localities:** Foot of Likabula Valley, *Chapman JD & Chapman EG 9484* (FHO).

### *Cyperus dereilema* Steud.

Robust, tufted sedge, up to 1 m high when flowering. Dark glossy leaves. Inflorescence large, brown, subtended by leafy bracts up to 60 cm long. Major peduncles carry secondary inflorescence of numerous stalked and sessile spikelet clusters.

**Flowering:** February. **Habitat:** Forest clearings, near rivers. **Altitude:** c. 1800 m. **Distribution:** Ethiopia to Malawi.

**Localities:** Lichenya River, below the forestry hut, *Hepper FN 7359* (K).

### *Cyperus distans* L.f.

Tufted sedge, up to 60 cm high. Inflorescence wide and compound. Spikelets narrow, reddish-brown.

**Habitat:** Streambanks and wet grassland. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Esperanza, *Chapman JD & Chapman EG 8299* (MO).

### *Cyperus elegantulus* Steud.

Syn. *Cyperus cimicinus* J. & C.Presl; *Pycneus elegantulus* (Steud.) C.B.Clarke

Small sedge, up to 15 cm high. Leaves shorter than culms, narrow, few in number. Inflorescence black, very congested, subtended by 1 or 2 filiform leafy bracts of unequal length.

**Flowering:** May. **Habitat:** Gravel run-offs at path side. **Altitude:** c. 2000 m. **Occurrence:** Very locally common to abundant. **Distribution:** Ethiopia to South Africa (KwaZulu-Natal). **Comments:** Haines & Lye (1983) place this species in *Cyperus niger* Ruiz & Pav. ssp. *elegantulus* (Steud.) Lye.

**Localities:** Sombani to Madzeka near the Chinzama Fork, *Chapman JD & Patel IH 5715* (FHO).

### *Cyperus elegantulus* Steud.

var. *submelanostachys* Kük.

Syn. *Pycneus elegantulus* (Steud.) C.B.Clarke

var. *submelanostachys* Kük.

Tufted perennial sedge. Inflorescence of several sessile clusters and one to several pedunculate clusters. Spikelets look dark brown laced with gold.

**Habitat:** Damp areas in montane grassland. **Altitude:** c. 2100 m. **Distribution:** S. Malawi and Zimbabwe.

**Localities:** Sombani Plateau, *Wild H 6215* (K).

### *Cyperus glaucophyllus* Boeck.

var. *zambesiensis* (C.B.Clarke) Kük.

A robust perennial sedge, up to 1.2 m high when flowering. Leaves flat, scabrid on margin and major ribs. Leaf sheaths purplish. Spikelets reddish-brown.

**Habitat:** Forest edge, scrub, along paths, particularly damp places. **Distribution:** Kenya, Tanzania and Malawi.

**Localities:** Mt. Mulanje, *Adamson G 419* (K).

### *Cyperus hemisphaericus* Boeck.

Syn. *Mariscus hemisphaericus* (Boeck.) C.B.Clarke

Robust, tussocky sedge up to 90 cm high. Leaves flat or folded, rather stiff. Inflorescence of short wide spikes, pale yellow.

**Flowering:** December. **Habitat:** Open woodland or on fire traces in wooded grassland. **Altitude:** c. 600-850 m. **Occurrence:** Locally common. **Distribution:** E. Kenya and Tanzania, Malawi and Mozambique.

**Localities:** Close to the Malawi Tea Factory, *Chapman JD & Chapman EG 8297* (MO). Foot of Likabula Valley, *Chapman JD & Chapman EG 9433* (FHO). Mt. Mulanje, *Whyte A s.n.* (K).

### *Cyperus nigricans* Steud.

Syn. *Pycneus nigricans* (Steud.) C.B.Clarke; *P. nyasensis* C.B.Clarke

Robust, perennial sedge, forming dense tussocks, up to 1 m high when flowering. Inflorescence a terminal, compact black head of lanceolate spikelets, subtended by 2-3 leafy, spreading bracts up to 20 cm long.

**Habitat:** Marshy ground in montane grassland. **Distribution:** Ethiopia to Malawi, as far as is known.

**Localities:** Mt. Mulanje (no other locality given), *Whyte A s.n.* (K).

### *Cyperus pseudoleptocladus* Kük.

Large, clump-forming sedge, up to 1.8 m when flowering. Inflorescence consists of one group of sessile spikelets and one group of pedunculate spikelets. Involucral bracts leafy, up to 25 cm long. Spikelets reddish-brown.

**Flowering:** May. **Habitat:** Forest edge and damp scrub. **Altitude:** c. 1850 m. **Occurrence:** Locally common.

**Distribution:** Uganda, Kenya, Tanzania and Malawi.

**Localities:** Chambe Plateau, *Chapman JD 597* (K). Linji (Upper Lichenya Plateau), *Chapman JD & Chapman EG 7254* (FHO).

### *Cyperus sesquiflorus* (Torr.) Mattf. & Kük.

ssp. *sesquiflorus*

Syn. *Kyllinga odorata* Vahl

Tufted perennial sedge with a short creeping rhizome. Culms up to 60 cm high. Inflorescence a single, cylindrical spike, whitish, subtended by



2-4 leafy, usually reflexed bracts, up to 12 cm long.

**Habitat:** Disturbed ground. **Altitude:** c. 650 m. **Distribution:** Uganda, Kenya, Tanzania and Malawi

**Localities:** Near the Mulanje Tea Factory, *Chapman JD & Chapman EG 8304* (MO).

***Cyperus spissiflorus* (C.B.Clarke) K.Schum.**

Syn. *Pycreus spissiflorus* C.B.Clarke

Sedge, with inflorescences of light brown congested spikelets.

**Distribution:** Endemic to Mt. Mulanje.

**Localities:** Mt. Mulanje (no other locality given), *Whyte A s.n.* (K).

***Ficinia filiformis* (Lam.) Schrad.**

Clumped sedge, up to 30 cm high and 45 cm spread. Leaves filiform. Inflorescence a blackish-brown head of 1-6 spikelets.

**Flowering:** December. **Habitat:** Unburnt montane grassland or bare bauxite patches. **Altitude:** c. 2000 m. **Distribution:** Tanzania, Malawi and South Africa.

**Localities:** Linji Plateau, at the north of the Lichenya Plateau, *Chapman JD 6053 & 6081* (FHO).

***Ficinia* sp. 1**

Tufted sedge.

**Habitat:** Montane grassland. **Altitude:** 1800 m.

**Localities:** Thuchila Shelf, lower slopes of Nandalanda, *Chapman JD & Tawakali EJ 5963* (FHO).

***Ficinia* sp. 2**

Small sedge, up to 30 cm high. Stiff, very narrow leaves. Inflorescence dark brown, sessile spikelets in head-shaped cluster.

**Habitat:** Growing at edge of a large patch of *Restio mahonii* in shrubby grassland. **Altitude:** 2100 m.

**Localities:** Path from Minunu hut to Chinzama hut, *Strugnell AM et al. 49* (FHO).

***Fimbristylis dichotoma* (L.) Vahl**

Tufted perennial sedge with numerous leaves, up to 60 cm high when flowering. Inflorescence with 2-3 orders of branches, numerous ovate spikelets, reddish-brown.

**Flowering:** June. **Habitat:** On rocky river bed. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa; also in South Africa.

**Localities:** Likabula Gorge, *Brass LJ 16386* (K).

***Fuirena ciliaris* (L.) Roxb.**

Annual sedge, 15-70 cm high when flowering. Culms and leaf blades hairy. Inflorescence green or brownish, hairy. Spikelets in sessile or stalked clusters from the upper leaf sheaths.

**Flowering:** July. **Habitat:** River bank. **Distribution:** Ghana, Kenya, Tanzania and Malawi.

**Localities:** Lujeri, Ruo Gorge, *Howard-Williams C 162* (K).

***Fuirena stricta* Steud. ssp. *stricta***

Loosely tufted perennial sedge, up to 45 cm high. Leaves up to 4 mm wide. Inflorescence of 1-several sessile or pedunculate clusters of spikelets, reddish-brown, angular in appearance.

**Flowering:** November. **Habitat:** Damp areas of montane grassland, or on rocks in streams. **Altitude:** c. 1800 m.

**Distribution:** East Africa and Malawi.

**Localities:** Path from the Likabula Valley to Lichenya Plateau, at the Munye-Munye Stream, *Patel IH 855* (K). Ma Brown's Cottage, Lichenya Plateau, *Wild H 6169* (K).

***Isolepis fluitans* (L.) R.Br.**

A carpet-forming or submerged perennial sedge with fine, much-branched stems. Inflorescence a solitary pedunculate spikelet, blackish-brown. Peduncles angular.

**Flowering:** August. **Habitat:** Bogs or streams. **Altitude:** 1800-2300 m. **Distribution:** Widespread in Africa.

**Localities:** Path from Chambe to Sapitwa, *Blackmore S et al. 396* (K). Lichenya Plateau, *Robinson EA 5281* (K). Lichenya Plateau, where the Nessa Path crosses a branch of the Lichenya River, *Strugnell AM & Salubeni AJ 29* (FHO).

***Rhynchospora rugosa* (Vahl) Gale**

Slender, leafy, perennial sedge, up to 1 m high when flowering. Stems triangular with minute teeth on the ridges. Leaves stiff, flat or folded. Inflorescence a slender panicle with main branches ending in small clusters, brown.

**Habitat:** Thick montane grassland or bogs. **Altitude:** c. 1800 m. **Distribution:** Scattered in tropical Africa, more common in South Africa and Madagascar.

**Localities:** Little Ruo River, by the hut, *Hilliard OM & Burt BL 6244* (K). Lichenya Plateau, *Robinson EA 5269* (K).

***Scleria racemosa* Poir.**

Robust, perennial, clump-forming sedge, up to 3 m high when flowering. Leaves very sharp. Inflorescence confined to upper part of plant, pale to dark brown. Fruit smooth, glabrous, white with pinkish tinge.

**Fruiting:** August. **Habitat:** *Brachystegia* woodland and seepage areas on the lower slopes of Mt. Mulanje. **Altitude:** 750-1050 m. **Distribution:** Sudan, Uganda, Kenya, Tanzania, D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe, Angola and Madagascar.

**Localities:** Near Phalombe, *Chapman JD 4/652* (K). Foot of Mt. Mulanje. Phalombe River, *Chapman JD & Chapman EG 7898* (FHO).

***Tetraria mlanjensis* J.Raynal**

Herb, up to 70 cm high. Leaves setaceous. Leaf sheaths and inflorescence reddish-brown.

**Flowering:** July. **Habitat:** Montane grassland. **Altitude:** c. 2200 m. **Occurrence:** Occasional. **Distribution:** Endemic to Mt. Mulanje.  
**Localities:** Mchese Mt., *Chapman JD & Chapman EG 8690* (FHO). Headwaters of the Mulosa River, Naikoto area, *Chapman JD & Chapman EG 8799* (FHO). Thuchila to Great Ruo Basin, near the Saddle, *Hilliard OM & Burt BL 6391* (K).

DIOSCOREACEAE  
Ref. Wilkin, 2001.

***Dioscorea bulbifera* L.**  
Dioecious, herbaceous climber, from a tuber. Leaves large but to a maximum of 20 cm long, heart-shaped, deeply cordate. Aerial tubers sub-globose, in the leaf axils.  
**Habitat:** Forest edge. **Altitude:** c. 700 m. **Distribution:** Throughout tropical Africa.  
**Localities:** Esperanza, *Chapman JD & Chapman EG 6962* (FHO).

***Dioscorea praeheensis* Benth.**  
Syn. *Dioscorea odoratissima* Pax  
Dioecious, herbaceous climber from a tuber. Leaves ovate-lanceolate with a widely cordate or truncate base, up to 15 cm long. No aerial tubers. Flowers small, greenish-white. Capsule 3-winged, broader than long.  
**Flowering:** February. **Fruiting:** March-April. **Habitat:** Edge of riverine bush. **Altitude:** c. 850 m. **Distribution:** Sierra Leone to East Africa, south to Malawi and Angola.  
**Localities:** Esperanza, *Chapman JD & Chapman EG 8387* (MO). Likabula Valley, *Chapman JD & Chapman EG 9026* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9491* (FHO).

***Dioscorea quartiniana* A.Rich.**  
Dioecious, slender, herbaceous twiner. Leaves with usually 3-5 leaflets. No aerial tubers. Flowers creamy-pink with a sweet fragrance.  
**Flowering:** January-March. **Habitat:** Edge of forest and transition woodland. **Altitude:** c. 1850 m. **Distribution:** From Senegal and Ethiopia to Zimbabwe, South Africa and Angola.  
**Localities:** Lichenya, close to the forestry hut, *Chapman JD 6111* (FHO). Linji, upper Lichenya Plateau, *Chapman JD & Chapman EG 7235* (FHO). Lichenya Plateau, Nessa Path forest, *Chapman JD & Chapman EG 9472* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9506* (FHO).

***Dioscorea schimperiana* Hochst. ex Kunth**  
Dioecious, herbaceous climber. Large cordate leaves, densely, greyish, stellate-pubescent on the lower surface. Capsules also stellate-hairy.  
**Fruiting:** February. **Habitat:** Semi-closed woodland. **Altitude:** c. 1100 m. **Distribution:** Nigeria and Cameroon east to Ethiopia and south to Mozambique and Malawi.

**Localities:** Below cliffs of Cilemba, *Chapman JD & Chapman EG 7175* (FHO).

DIPSACACEAE

***Scabiosa columbaria* L.**  
Herb, up to 1 m high when flowering. Basal leaves oblong-lanceolate. Stems solid. Inflorescences hemispherical, more than 2 cm diameter. Flowers mauve or white.  
**Flowering:** September onwards. **Habitat:** Montane grassland. **Altitude:** c. 2300 m. **Distribution:** Eastern Africa from Ethiopia to South Africa.  
**Localities:** Head of the Ruo Valley on the approach to the Chinzama Hut, *Strugnell AM et al. 84* (FHO).

DIPTEROCARPACEAE

***Monotes africanus* A.DC.**  
Tree, up to 8 m high. Leaves elliptic to oblong, obtuse to emarginate at the apex. Flowers densely greyish-tomentose. Fruits yellowish-brown, globular, 5-6-winged.  
**Flowering:** January. **Fruiting:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1050 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Angola.  
**Localities:** Likabula Valley, Chapaluka track, *Chapman JD & Chapman EG 7081 & 7350* (FHO).

DRACAENACEAE  
(previously in Liliaceae)

***Dracaena laxissima* Engl.**  
Weak-stemmed shrub or climber/scrambler, up to 8 m high. Leaves broadly elliptic with an acuminate tip. Flowers greenish-white.  
**Flowering:** November-December. **Fruiting:** May. **Habitat:** Montane and sub-montane forest. **Altitude:** 900-1800 m. **Occurrence:** Common. **Distribution:** Nigeria eastwards to East Africa (including the off-shore islands) and south to Mozambique.  
**Localities:** Likulezi Valley, *Chapman JD 493* (FHO). Lichenya River, near the forestry hut, *Chapman JD 5661* (FHO). Mulosa Stream, at the entrance to the Mulosa Crater, Lauderdale, *Chapman JD 6518* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9452* (FHO).

***Dracaena mannii* Baker**  
Shrub or tree, usually up to about 8 m high but may reach 12 m inside the forest. Stems with prominent leaf scars. Leaves narrowly elliptic, clasping the stem, bunched towards the stem apex. Flowers greenish-white. Fruits orange-red.



**Flowering:** October. **Fruiting:** October-February. **Habitat:** Forest edge, riparian forest, low transition forest. **Altitude:** 550-1200 m. **Occurrence:** Sporadic. **Distribution:** Widespread in tropical Africa from Senegal to Kenya and south to Mozambique, Angola and the N. E. corner of KwaZulu-Natal in South Africa. **Comments:** This species, with its thick, corrugated bark, is often scorched and can obviously withstand fires.

**Localities:** Mulosa Stream, near where it emerges from the Crater, *Chapman JD 546* (FHO), Crater Gorge, below Manga Peak, *Chapman JD 6654* (FHO). Along the Boma Path, upper part of the Chitakali Stream, *Chapman JD & Chapman EG 6833* (FHO). Likabula to Lichenya, *Chapman JD & Tawakali EJ 5550* (FHO).

### *Dracaena steudneri* Engl.

Shrub or tree, up to 10 m high, often branching low down. Leaves lanceolate, up to 1 m long, bunched at ends of branches, the outer ones drooping. Flowers greenish, slightly perfumed, on terminal, branched inflorescences.

**Flowering:** June. **Fruiting:** October. **Habitat:** Evergreen forest. **Altitude:** 850-1500 m. **Occurrence:** Common, often gregarious in the forest understorey. **Distribution:** From Ethiopia and Sudan down the eastern side of Africa to Mozambique and Zimbabwe.

**Localities:** Naminjwa Valley, Mchese Mt., *Chapman JD 594* (FHO). Mulosa Stream, just above Lauderdale, *Chapman JD 6512* (FHO). Source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6777* (FHO).

### *Sansevieria* sp.

Acaulescent herb forming clumps, with leaves up to 1.5 m high. Leaves grooved from the base and almost circular in cross-section at the base gradually developing a deep trough towards the apex. Peduncle 25 cm long bearing a mass of pendant, fragrant, creamy-white flowers.

**Flowering:** November. **Habitat:** On rocks in lithophytic woodland around the west, north and east sides of Mt. Mulanje. **Altitude:** 850-1250 m. **Occurrence:** Fairly common.

**Localities:** Likabula Valley (and all round the W., N. & E. sides of Mt. Mulanje), *Chapman JD & Chapman EG 8940* (FHO).

## DROSERACEAE

Ref. Exell & Laundon, 1956.

### *Drosera dielsiana* Exell & Laundon

Acaulescent, perennial herb. Leaves obovate-spathulate, glandular, in a basal rosette. Flowers pink to reddish-purple.

**Fruiting:** July. **Habitat:** In shallow peaty soil over rock or in shallow bogs in upland grassland. **Altitude:** 1950-2250 m. **Occurrence:** Locally abundant. **Distribution:** Malawi, Mozambique, Zimbabwe, Swaziland, Lesotho and South Africa (KwaZulu-Natal, Transvaal, Orange Free State).

**Localities:** Between Thuchila and Chambe, *Jackson G 1950* (BM). Slopes of the main peak, *Newman EI & Whitmore TC 38* (BM). Thuchila Plateau, *Newman EI & Whitmore TC 130* (BM).

### *Drosera madagascariensis* DC.

Caulescent, perennial herb. Leaves narrowly obovate. Flowers pink or purple.

**Habitat:** In seepage areas and bogs, often with *Sphagnum* and *Juncus*. **Altitude:** 1350-1950 m. **Distribution:** Throughout tropical Africa from Mali eastwards and south to South Africa (Transvaal, KwaZulu-Natal and Pondoland).

**Localities:** Chiphalombe Stream, *Chapman JD & Chapman EG 7917* (MO). Below Main Peak and Nakodzwe, *Jackson G 1974* (BM). Little Ruu Plateau, *Newman EI & Whitmore TC 467* (BM).

## EBENACEAE

Refs. De Winter & White, 1961; White, 1988; White & Caveney, 1980.

### *Diospyros abyssinica* (Hiern) F.White ssp. *abyssinica*

Tree, up to about 35 m high. Dark grey, flaking bark. Leaves broadest near the middle, apex bluntly acuminate. Stems glabrous.

**Habitat:** Mid-altitude forest. **Altitude:** c. 1300 m. **Distribution:** Throughout tropical Africa from Mali and Guinea to Ethiopia and southwards to Mozambique and Zimbabwe.

**Localities:** Mchese Mt., Nandiwo Gorge forest, *Chapman JD & Chapman EG 9177* (FHO).

### *Diospyros abyssinica* (Hiern) F.White ssp. *attenuata* F.White

Tree, up to at least 27 m high. Leaves broadest near base, distinctly more slender below the acuminate apex. Stems zigzagged, slightly pilose.

**Habitat:** Mid-altitude forest. **Altitude:** 1200-1350 m. **Occurrence:** Common canopy species. **Distribution:** S. Malawi and Zimbabwe.

**Localities:** Muluji Valley, Chisongeli Forest, *Chapman JD & Chapman EG 9286* (FHO). Big Ruu Valley, *Chapman JD & Chapman EG 9397* (FHO).

### *Diospyros kirkii* Hiern

Small, deciduous or semi-deciduous tree, up to about 8 m high. Bark dark grey, longitudinally fissured. Leaves coriaceous, rounded at apex and base. Lower surface pubescent, prominent venation.

**Fruiting:** June-July. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1000 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Low down the S.E. slopes of Mchese Mt., *Chapman JD & Chapman EG 8734* (FHO).



*Diospyros lysioides* Desf.

ssp. *sericea* (Bernh.) de Winter

Deciduous or semi-deciduous shrub or small tree, up to about 7 m high. Leaves densely hairy, secondary veins prominently raised.

**Flowering:** July onwards. **Fruiting:** January–April. **Habitat:** Forest edge or rocky outcrops in *Brachystegia* woodland. **Altitude:** 1100–1250 m. **Distribution:** From the D.R. Congo to E. Cape Province in South Africa, Namibia and Angola.

**Localities:** Foot of Chambe Peak, Mt. Mulanje base, *Chapman JD & Chapman EG 7055* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9076 & 9189* (FHO).

*Diospyros mespiliformis* Hochst. ex A.DC.

Evergreen tree, up to 30 m high. Dense, rounded crown. Dark brown bark, longitudinally fissured.

**Fruiting:** April–August. **Habitat:** Lowland forest, sometimes on termite mounds in woodland. **Altitude:** 550–950 m. **Distribution:** Widespread in tropical Africa, also in South Africa (Transvaal) and Namibia.

**Localities:** T.A. Mabuka’s Milonde Court, *Chapman JD 6587* (FHO). Likulezi River crossing, near Likulezi Farm, *Chapman JD & Chapman EG 7427* (FHO). Phalombe River, *Chapman JD & Chapman EG 7897* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 8053* (FHO). 0.5 km from the Likabula Forestry Office, *Chapman JD & Chapman EG 8522* (FHO). T.A. Mabuka’s, Milonde Court, *Chapman JD & White F 8441* (FHO).

*Diospyros natalensis* (Harv.) Brenan

Shrub or tree, up to 20 m high but often less. Small, subcoriaceous, elliptic-lanceolate leaves. Fruits ovoid-ellipsoid, apiculate.

**Flowering:** October. **Fruiting:** January–May. **Habitat:** In or at edge of riparian forest, often among large boulders. **Altitude:** 550–1700 m. **Occurrence:** Common in the understorey. **Distribution:** D.R. Congo, Uganda, Kenya, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (E. Cape Province).

**Localities:** Along Thuchila and Likulezi Streams, *Chapman JD 471* (FHO). Crater Gorge forest, Little Mulosa River, *Chapman JD 6635* (FHO). Likabula Valley, Chapuluka River, *Chapman JD & Chapman EG 7065* (FHO). Likabula Valley, at the Likulezi Ng’ono waterfall, *Chapman JD & Chapman EG 7530* (FHO). Chiphalombe Valley, below the shelf, *Chapman JD & Chapman EG 7919* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8550* (FHO). Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8608* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9346* (FHO).

*Diospyros squarrosa* Klotzsch

Small tree, up to 7 m high. Smooth, grey bark, shallowly fissured. Leaves obovate with yellow veins.

**Habitat:** Rocky hillside. **Altitude:** c. 800 m. **Distribution:** Kenya to Mozambique.

**Localities:** Chikomwe Hill, Likulezi, *Chapman JD & Chapman EG 7718* (FHO).

*Diospyros whyteana* (Hiern) F.White

Tree, up to 15 m high. Leaves lanceolate-elliptic, base rounded to cordate, margin fringed with hairs. Fruit completely concealed by the inflated, papery calyx.

**Flowering:** August–October. **Fruiting:** May–August. **Habitat:** Understorey of riparian forest. **Altitude:** 1000–2100 m. **Distribution:** From S.W. Tanzania to the Western Cape in South Africa.

**Localities:** Chitakali Stream (west branch), *Chapman JD & Chapman EG 6895* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7512* (FHO). Entrance to Phalombe Gorge, *Chapman JD & Chapman EG 7819* (FHO). Chiphalombe River, *Chapman JD & Chapman EG 7904* (FHO). Lower western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8653* (FHO). Fort Lister forestry office to Sombani Plateau, *Chapman JD & Chapman EG 8752* (FHO). Madzeka Valley, *Chapman JD & Patel IH 5718* (FHO). Thuchila Shelf, *Chapman JD & Patel IH 5763* (FHO).

*Diospyros zombensis* (B.L.Burt) F.White

Usually a sub-shrub, up to 1 m high but may occasionally be a small tree, up to 2.5 m. Leaves glabrous with a fringe of hairs at the margin, broad to obovate, apex abruptly and shortly acuminate.

**Fruiting:** April–May. **Habitat:** *Brachystegia* woodland. **Altitude:** 800–900 m. **Distribution:** Kenya to Zambia, Malawi and Mozambique. **Comments:** Leaves turn red during the cold season (June–July).

**Localities:** Likabula House, Likabula Valley, *Chapman JD & Chapman EG 8469* (FHO). Foot of Mchese Mt., in the Fort Lister Gap, *Chapman JD & Chapman EG 8635* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9034* (FHO).

*Euclea crispa* (Thunb.) Gürke ssp. *crispa*

Shrub, up to 2.5 m high. Leaves elliptic, hairy on lower surface, margin not undulate. Fruits small (about 0.5 cm diameter), spherical, ripening black.

**Flowering:** October. **Fruiting:** February–July. **Habitat:** Forest edge, *Brachystegia* woodland, low thickets and rocky outcrops. **Altitude:** 1000–1750 m. **Occurrence:** Sporadic to common. **Distribution:** From the D.R. Congo to Mozambique, South Africa (S. and W. Cape) and Angola.

**Localities:** Likulezi Valley, *Chapman JD 457* (FHO). Lower slopes of Mulanje, *Chapman JD & Chapman EG 7177* (FHO). Mchese Mt., between the Napolo and Namajani Gorges, *Chapman JD & Chapman EG 8702* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 8903* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9139* (FHO).

*Euclea divinorum* Hiern

Evergreen tree, up to 25 m high with a dense, rounded crown. Leaves elliptic to narrowly lanceolate, undulating margin. Fruits spherical, up to 0.7 cm diameter, ripening purplish-red.



**Flowering:** September. **Fruiting:** August. **Habitat:** Forest. **Altitude:** 1300-1400 m. **Distribution:** From Ethiopia and Sudan to South Africa, Namibia and Angola.

**Localities:** Chiphalombe River, below the shelf, *Chapman JD & Chapman EG 7901* (FHO). Chiphalombe shelf, *Chapman JD & Chapman EG 8085* (FHO).

*Euclea natalensis* A.DC. ssp. *obovata* F.White  
Shrub or small tree, up to 12 m high. Leaves coriaceous, glossy, obovate with a rounded or obtuse apex, margins undulate and slightly inrolled. Flowers white, fragrant. Fruits pale yellow.

**Flowering:** May-August. **Fruiting:** June-July. **Habitat:** Riparian forest, *Brachystegia* woodland. **Altitude:** 800-1200 m. **Distribution:** Kenya to southern Mozambique, with an outlying population in S. Natal and Cape province in South Africa.

**Localities:** Nakaye Stream, Likabula, *Chapman JD 590* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7645* (FHO). Between the Chiphalombe and Phalombe streams, *Chapman JD & Chapman EG 7742* (FHO). Tinyade, Likulezi, *Chapman JD & Chapman EG 7779* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8478* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8809* (FHO). Low down the western slopes of Mchese Mt., Nanthali Stream, *Chapman JD & Chapman EG 8819* (FHO).

*Euclea racemosa* Murr.

ssp. *schimperii* (A.DC.) F.White

Shrub or small tree, up to 7 m high. Dark green, glossy leaves, somewhat obovate. Fruits spherical, up to 0.7 cm diameter.

**Flowering:** May. **Fruiting:** July. **Habitat:** *Brachystegia* and transition woodland, riparian forest. **Altitude:** 800-1000 m. **Distribution:** Eastern Africa from Egypt to Mozambique.

**Localities:** Phalombe River, *Chapman JD & Chapman EG 7847* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9090* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9111, 9214A & 9214B* (FHO).

## ERICACEAE

*Refs.* Judd, 1984, 1995 ; Oliver, 1987, 1988, 1989, 1992, 1994, White et al. 2001.

*Agarista salicifolia* (Lam.) G.Don

Syn. *Agauria salicifolia* (Lam.) Oliv.

Tree, up to 13 m high. Leaves narrowly lanceolate, subcoriaceous, discoloured, under surface pale grey with dark midrib. Flowers greenish tinged with red or yellow.

**Flowering:** May-June. **Fruiting:** August-November. **Habitat:** *Brachystegia* woodland at higher altitudes, montane grassland, forest. **Altitude:** 1150-1900 m. **Occurrence:** Locally common. **Distribution:** Widespread on the mountains of tropical Africa.

**Localities:** Ruvo Basin, *Chapman JD 422* (FHO). Lower slopes of Mulanje, Boma Path, *Chapman JD & Chapman EG 6860* (FHO). Likhabula Valley, Chapaluka track, *Chapman*

*JD & Chapman EG 7105* (FHO). Malilima (Chisongole) forest, *Chapman JD & Chapman EG 9535* (FHO). Thuchila Shelf, *Chapman JD & Patel IH 5746* (FHO).

*Erica austronyassana* Alm & T.C.E.Fr.

Erect sub-shrub, up to 15 cm high, forming cushions, up to 3.5 m in diameter. Slender branchlets, minutely pubescent. Leaves in whorls of 3, petioles minutely ciliolate. Flowers in apical groups of 3, pink to mauve.

**Flowering:** May. **Habitat:** High altitude, rocky terrain. **Altitude:** c. 1900 m. **Occurrence:** Very local. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Sapitwa Peak, *Wild H 6194* (K).

*Erica benguelensis* (Welw. ex Engl.) E.G.H.Oliv.  
Syn. *Philippia benguelensis* (Welw. ex Engl.) Britten

Shrub or small tree, up to 10 m high. Leaves in whorls of 4, dark green above, grey below, margin rolled. Flowers pale green tipped or marked with maroon.

**Flowering:** November-December. **Habitat:** Open *Brachystegia* woodland, forest edge, montane grassland among shrubs, rocks or on bare ground. **Altitude:** 1150-2150 m. **Occurrence:** Sporadic and locally common. **Distribution:** E. D.R. Congo, Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Upper Likulezi valley, *Chapman JD 488* (FHO). On spur between Mango & Naminjiwa Streams, Mchese Mt., *Chapman JD 592* (FHO). Chambe Basin, *Chapman JD 5631* (FHO). Linji Plateau, *Chapman JD 6051* (FHO). Likhabula Valley, Chapaluka track, *Chapman JD & Chapman EG 7104* (FHO). Chisepu Stream, on the approach to Sapitwa from the Thuchila Shelf, *Chapman JD & Chapman EG 7576* (FHO). Mulanje outer slopes on the crest of the spur between the Likulezi & Nandiwo valleys, *Chapman JD & Chapman EG 7772* (FHO). Entrance to the Phalombe Gorge, *Chapman JD & Chapman EG 7816* (FHO). Chiphalombe Shelf, near the source of the Nandiwo Stream, *Chapman JD & Chapman EG 7860* (FHO). Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG 8190* (FHO).

*Erica johnstoniana* Britten

Shrub, up to 2 m high. Leaves in whorls of 4, upper surface covered in stout, white hairs. Flowers pink. The whole plant has a woolly look.

**Flowering:** May. **Habitat:** Montane grassland. **Altitude:** 2000-2400 m. **Occurrence:** Local. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya Plateau near Ma Brown's Cottage, *Chapman JD 331* (FHO). Slopes of Namisili, above Sombani Basin, *Chapman JD & Patel IH 5706* (FHO).

*Erica kiwuensis* (Engl.) F.White

Syn. *Blaeria kiwuensis* Engl.; *Blaeria kingaënsis* Engl.

Sub-shrub, up to 30 cm high. Leaves in whorls of 3, glandular hairs widely spaced along the leaf margins. Inflorescences terminal on short lateral branches. Flowers pink to pale mauve.



**Flowering:** April-May. **Habitat:** In short, high-altitude grassland. **Altitude:** c. 2300 m. **Occurrence:** Locally abundant. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Cilemba Peak, *Chapman JD 364* (FHO). On spur leading up to Manene Peak from Madzeka forestry hut, *Chapman JD & Patel IH 5785* (FHO).

*Erica microdonta* (C.H.Wright) E.G.H.Oliv.  
Syn. *Ericinella brassii* Brenan; *Ericinella microdonta* (C.H.Wright) Alm & T.C.E.Fr.

**Shrub**, usually up to 2-3 m high, but can grow to 10 m or be almost prostrate. Leaves in whorls of 4, glabrous apart from short hairs spaced along the leaf margin. Flowers white.

**Flowering:** Much of the year. **Habitat:** Montane grassland, thickets, on streambanks, bare soil of fire breaks, rocky terrain of high peaks, forest edge. **Altitude:** 1800-2900 m. **Occurrence:** Occasional to locally common, especially in areas not burnt for several years. **Distribution:** S.W. **Localities:** Chambe Peak, *Chapman JD 5607* (FHO). Chambe Basin, *Chapman JD 5621* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 6979* (FHO). Sapitwa, approaching from the Thuchila Shelf (Chisepu) by the red route, *Chapman JD & Chapman EG 7559* (FHO). Edge of the Chiphalombe Shelf, *Chapman JD & Chapman EG 7864* (FHO). West Peak of Sapitwa, *Chapman JD & Chapman EG 8170* (FHO). Summit ridge of Mchese Mt., *Chapman JD & Chapman EG 8688* (FHO). Likhabula to Lichenya path, *Chapman JD & Tawakali EJ 5539* (FHO).

*Erica milanjiana* Bolus

Semi-procumbent, viscid sub-shrub, up to 80 cm high and 1.5 m wide. Branchlets hairy, without infrafoliar ridges. Leaves in whorls of 4, narrowly ovate, with well-spaced, glandular hairs on the margins. Flowers reddish-pink.

**Flowering:** September-October. **Habitat:** In shady places, under rocks or on streambanks. **Altitude:** 1800-1950 m. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Mt. Mulanje, south-west ridge, *Brass LJ 16511* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8071* (FHO).

*Erica nyassana* (Alm & T.C.E.Fr.) E.G.H.Oliv.  
Syn. *Philippia nyassana* Alm & T.C.E.Fr.

**Shrub**, up to 2.5 m high. Leaves in whorls of 3, tiny, appressed and curved inwards, glabrous apart from shortly ciliate margins. Flowers pinkish-white on the outside, deep red on the inside.

**Flowering:** December, May. **Habitat:** Unburnt montane grassland. **Altitude:** 1800-1900 m. **Distribution:** Endemic to Mt. Mulanje. **Comments:** This species appears intermediate between *Erica benguelensis* and *E. microdonta* and may represent a hybrid between them (White *et al.*, 2001). **Localities:** Close to Lichenya hut, *Chapman JD 5605* (FHO). Linji Plateau, *Chapman JD 6074* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 6982* (FHO).

*Erica whyteana* Britten

Straggling sub-shrub, up to 30 cm high with branchlets, up to 1 m long. Strongly developed infrafoliar ridges. Leaves spirally arranged or in whorls of 3 or 4, glabrous, apices shortly aristate. Flowers white to purplish-pink.

**Flowering:** April-May. **Habitat:** Damp, rocky places in montane grassland. **Altitude:** c. 2100 m. **Occurrence:** Locally common. **Distribution:** Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Path from Chambe to Lichenya, *Chapman JD 362* (FHO). Chisepu, Thuchila Shelf below Sapitwa, *Chapman JD & Chapman EG 7583* (FHO).

*Vaccinium exul* Bolus

**Shrub**, up to 5 m high. Leaves narrowly ovate with serrated margin. White, bell-shaped flowers in axillary racemes. Fruits black when ripe.

**Flowering:** September-November. **Fruiting:** December-May. **Habitat:** Forest edges and thickets in unburnt grassland. **Altitude:** 1800-2350 m. **Occurrence:** Locally common. **Distribution:** Mt. Mulanje and South Africa (Transvaal). **Comments:** Brenan (1954a) recognised the virtually glabrous plants from Mt. Mulanje as var. *africanum* (Britten) Brenan. The typical plant from South Africa has a dense indumentum.

**Localities:** Lichenya Plateau, at the C.C.A.P.Cottage, *Chapman JD & Chapman EG 6970* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8076* (FHO). Foot of West Peak, above the Lichenya-Chambe path, *Chapman JD & Chapman EG 8148* (FHO). Big Ruo Basin, *Chapman JD & Chapman EG 9375* (FHO). At the Knife-Edge, on the Chambe side, *Chapman JD & Patel IH 5744* (FHO). Head of Likulezi Valley, *Chapman JD & Patel IH 5780* (FHO). Chinzama to Sombani, *Chapman JD & Patel IH 5783* (FHO).

**ERIOCAULACEAE**

*Refs.* Obermeyer, 1981; Phillips, 1996.

*Eriocaulon dregei* Hochst.

var. *sonderianum* (Körn.) Oberm.

Syn. *Eriocaulon sonderianum* Körn.

Tufted herb, 5-10 cm high in leaf, up to 37 cm high in flower. Leaves basal, up to 8 cm long and 5 mm wide. Capitula sub-globose, white.

**Flowering:** December-February. **Habitat:** In swampy ground along streams and in grassland. **Altitude:** 1800-2000 m. **Occurrence:** Gregarious and very local. **Distribution:** S. Malawi and South Africa (Transvaal, Natal and Cape).

**Localities:** Mulanje Mt. (no other locality given), *Chapman JD 491* (K). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9459* (FHO).

*Eriocaulon mulanjeanum* S.M.Phillips

Annual herb, 5-7 cm high. Leaves few and basal, linear, 1-2 cm long and c. 1 mm wide. Black, globose capitula.



**Flowering:** May. **Habitat:** In grassland. **Altitude:** c. 1800 m. **Distribution:** S. Malawi (Zomba and Mulanje Mts. only). **Comment:** Only collection known from Mt. Mulanje. **Localities:** Lichenya Plateau, *Wild H 6162* (K).

## ERYTHROXYLACEAE

### *Erythroxylum emarginatum* Thonn.

Shrub or small tree, usually up to 9 m high but occasionally to 15 m. Leaves variable but usually elliptic, emarginate at apex. Flowers small, white. Ripe fruits ellipsoid, fleshy, red.

**Flowering:** September-November. **Fruiting:** November-January. **Habitat:** Understorey of mid-altitude and submontane forest, riparian forest, forest edge. **Altitude:** 850-1700 m. **Distribution:** From Guinea sporadically eastwards to East Africa and south to South Africa.

**Localities:** Lauderdale, *Chapman JD 6605* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6765* (FHO). West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6886* (FHO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 7067* (FHO). Chambe West Face shelf, *Chapman JD & Chapman EG 8551* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8706* (FHO). Big Ruvo Valley, *Chapman JD & Chapman EG 9404* (FHO).

## ESCALLONIACEAE

### *Choristylis rhamnoides* Harv.

Shrub, climbing to 10 m or small, arching tree, up to 4 m high. Serrated, acuminate leaves. Flowers small, greenish-white.

**Flowering:** August-October. **Habitat:** Riparian forest, forest edge, open, rocky hillsides. **Altitude:** 1050-2000 m. **Distribution:** D.R. Congo, Burundi, Uganda, Tanzania, Malawi, Mozambique, Zimbabwe, Swaziland, Lesotho and South Africa (Transvaal, KwaZulu-Natal, Cape Province).

**Localities:** Likulezi Valley, *Chapman JD 474* (FHO). Chiphalombe shelf, *Chapman JD & Chapman EG 8074* (FHO). Mchese Mt., Nthambi Stream above Misomali village, Nkhulambe area, *Chapman JD & Chapman EG 8824* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9247* (FHO).

## EUPHORBIACEAE

*Refs.* Leach, 1973; Radcliffe-Smith, 1987, Webster, 1967.

### *Acalypha chirindica* S.Moore

Spreading, arching, shrub, up to 3 m high. Leaves ovate-lanceolate to narrowly rhombic-lanceolate. Infructescences cylindrical.

**Fruiting:** December. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 800 m. **Occurrence:** Common, locally abundant. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula House, riverbank path, *Chapman JD & Chapman EG 8318* (FHO).

### *Acalypha ornata* Hochst. ex A.Rich.

Semi-scandent shrub, up to 3 m high. Leaves ovate or elliptic-ovate, truncate or slightly cordate at base. Female spikes terminal. Male spikes slender, solitary in leaf axils.

**Flowering:** October-December. **Fruiting:** December. **Habitat:** Edge of riparian forest; unburnt *Brachystegia* woodland. **Altitude:** c. 600 m. **Distribution:** Widespread in tropical Africa.

**Localities:** T.A. Mabuka's, Milonde Court, *Chapman JD 6609* (FHO). Between Glenorchy and Likabula forestry depot, *Chapman JD & Chapman EG 6965* (FHO).

### *Acalypha psilostachya* Hochst. ex A.Rich.

Soft-wooded shrub or perennial herb, up to 3 m high. Petioles long and slender. Leaves ovate to ovate-lanceolate. Male and female flowers in same inflorescence, female flowers at the base.

**Flowering:** November. **Habitat:** Forest edge. **Altitude:** c. 1000 m. **Distribution:** From Sudan and Ethiopia to Mozambique and Angola.

**Localities:** Chitakali Stream, *Chapman JD & Chapman EG 6851* (FHO).

### *Acalypha racemosa* Wall. ex Baill.

Soft-wooded shrub or herb, up to 1 m high. Petioles up to 10 cm long. Leaves ovate, shallowly cordate at base, crenate-serrate at margin. Female inflorescences paniculate, terminal.

**Fruiting:** January. **Habitat:** Edge of riparian forest. **Altitude:** c. 800 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Linji Stream, on the Mt. Zion coffee estate side, *Chapman JD & Chapman EG 7042* (FHO).

### *Acalypha welwitschiana* Müll. Arg.

Shrub, up to 2 m high. Leaves rounded at base. Infructescences ovoid or subcylindric.

**Fruiting:** May. **Distribution:** Burundi, Tanzania, Zambia, Malawi, Mozambique and Angola.

**Localities:** Chambe Plateau, *Salubeni AJ 1612* (K, MO).

### *Alchornea hirtella* Benth.

f. *glabrata* (Müll. Arg.) Pax & K.Hoffm.

Weak-stemmed small tree or shrub, up to about 7 m high. Leaves shortly petiolate. Male inflorescences paniculate, up to 30 cm long. Female inflorescences much shorter. Fruits 3-lobed, with 3 persistent stigmas.

**Flowering:** April. **Fruiting:** April-May. **Habitat:** In or at the edge of riparian forest. **Altitude:** 600-1000 m. **Distribution:** Throughout the more humid parts of tropical Africa. **Localities:** Ruvo River-Mulosa River junction, *Chapman JD & Chapman EG 7473* (FHO). Ruvo Gorge, near the dam



above the Lujeri Power station, *Chapman JD & White F 8447* (FHO).

***Alchornea laxiflora* (Benth.) Pax & K.Hoffm.**

Small tree, up to 9 m high, with drooping branches. Leaves with long petioles and short acuminate tips. Male inflorescences axillary, developing on the older twigs. Female inflorescences terminal and shorter.

**Habitat:** Riverine, transition woodland. **Altitude:** c. 1100 m. **Distribution:** From Nigeria eastwards to Ethiopia and south to South Africa.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9088* (FHO).

***Antidesma membranaceum* Müll. Arg.**

Shrub or small tree, up to 10 m high. Under surface of leaves yellowish, hairy. Fruits reach a maximum size of 5 mm × 3.5 mm when dried and only slightly compressed.

**Flowering:** December-April. **Fruiting:** March-July. **Habitat:** *Brachystegia* woodland, edge of riverine forest or mixed woodland. **Altitude:** 600-1100 m. **Occurrence:** Common but sporadic. **Distribution:** Throughout the moister parts of tropical Africa and South Africa (Transvaal).

**Localities:** Above N.A. Nhanda H.Q., *Chapman JD 352* (FHO). Lower slopes above Esperanza, Nakolu Stream, *Chapman JD & Chapman EG 6684* (FHO). Chitakali crossing, Boma estate boundary, *Chapman JD & Chapman EG 6823* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6938* (FHO). Likabula Valley, along the Chapaluka River, *Chapman JD & Chapman EG 7076* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8394* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9190* (FHO).

***Antidesma vogelianum* Müll. Arg.**

Spreading shrub or small tree, up to 5 m high. Leaves almost glabrous. Fruits, up to 9 mm × 3.5 mm when dried, strongly compressed.

**Flowering:** September-November. **Fruiting:** November-January. **Habitat:** In or at the edge of riparian and mid-altitude forest. **Altitude:** 900-1500 m. **Distribution:** Throughout central, east and south tropical Africa.

**Localities:** Likulezi River, *Chapman JD 446* (FHO). Mulosa Stream, entrance to the Crater Gorge, *Chapman JD 6555* (FHO). Above Esperanza, headwater of the Pamba Stream, *Chapman JD & Chapman EG 6714* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6847* (FHO). Boma Path crossing, *Chapman JD & Chapman EG 6870* (FHO). Likabula Valley, Chapaluka River at Dziwe la Nkhalamba, *Chapman JD & Chapman EG 7075* (FHO). Mchese Mt., western slopes, *Chapman JD & Chapman EG 8589* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9335* (FHO).

***Bridelia atroviridis* Müll. Arg.**

Tree, up to 12 m high. Smooth, pale grey bark. Leaves acutely acuminate, drying dark green or blackish. Fruits 1-celled, green, ripening blackish-brown.

**Flowering:** November. **Fruiting:** February. **Habitat:** Low and mid-altitude forest. **Altitude:** c. 1000 m. **Distribution:** Sierra Leone eastwards to Ethiopia and East Africa; south to Zimbabwe and Angola.

**Localities:** Chitakali Stream, Boma Path, *Chapman JD & Chapman EG 6834* (FHO). Ruu Gorge, above the power station, *Chapman JD & Chapman EG (A) 8340* (FHO).

***Bridelia cathartica* G.Bertol.**

ssp. *melanthesoides* (Baill.) J.Léon.

var. *lingelsheimii* (Gehrm.) Radcl.-Sm.

Arching shrub or small tree, up to 7 m high. Leaves elliptic-oblong, blue-green above, dull and grey-green below. Fruits 2-celled, ripening blue-black.

**Flowering:** March. **Fruiting:** July. **Habitat:** *Brachystegia* woodland or riverine-fringing forest abutting on to *Brachystegia* woodland. **Altitude:** c. 800 m. **Distribution:** D.R. Congo, Somalia, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Namibia.

**Localities:** Likabula Valley, in the C.C.A.P. Estate, *Chapman JD & Chapman EG 8423* (FHO). Northern foot of Mchese Mt., just inside the F.R. boundary, *Chapman JD & Chapman EG 8631* (FHO).

***Bridelia micrantha* (Hochst.) Baill.**

Small tree, up to about 15 m high with a spreading, rather open crown. Leaves glabrous or sparingly pubescent, drying green to brown. Fruits 1-celled, ripening black.

**Fruiting:** November-January. **Habitat:** Edge of riparian forest and in secondary forest. **Altitude:** c. 850 m. **Distribution:** From Senegal to Ethiopia, southwards to through E. D.R. Congo and East Africa as far as South Africa (E. Cape) and Angola.

**Localities:** Linji Stream, on the Mt. Zion side, *Chapman JD & Chapman EG 7043* (FHO). Foot of Mt. Mulanje, Esperanza, *Chapman JD & Chapman EG 8325* (FHO).

***Clusia abyssinica* Jaub. & Spach**

Lax, dioecious shrub, up to 4 m high. Small white flowers. Fruit green with whitish markings.

**Flowering:** February-August. **Fruiting:** February-August. **Habitat:** Thickets, forest edge or clearings in cedar forest. **Altitude:** 1300-2250 m. **Occurrence:** Locally abundant. **Distribution:** From Somalia and Sudan to South Africa (KwaZulu-Natal) and Angola.

**Localities:** Mchese Mt., above Fort Lister Gap, *Chapman JD 624* (FHO). Likabula Valley, along the Lichenya path, *Chapman JD & Chapman EG 7261* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7932* (FHO). Mchese Mt., at head of the Namajani Stream, *Chapman JD & Chapman EG 8618* (FHO). Sombani Plateau, near Litakala Peak, *Chapman JD & Chapman EG 8760* (FHO).

***Clusia brassii* Brenan**

Shrub, up to 2 m high. Leaves suborbicular to broadly ovate, sub-sessile, glabrous, closely



arranged on stem. Male flowers greenish. Fruits green mottled white.

**Flowering:** November. **Fruiting:** August. **Habitat:** Forest edge or in shrubby grassland. **Altitude:** c. 2100 m. **Occurrence:** Common but sporadic. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, below Cilemba Peak, *Chapman JD & Chapman EG 8270* (FHO). Mulosa River headwaters below Naikoto, *Chapman JD & Chapman EG 8791* (FHO).

### *Clutia conferta* Hutch.

Compact shrub, up to 2 m high. Leaves oblong, rounded at apex, crowded at ends of branches. Male flowers greenish.

**Flowering:** May. **Habitat:** Low, tussock grassland or steep, stony slopes at high altitude. **Altitude:** 2400-2500 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Above Chisepu, on the approach to Sapitwa, *Chapman JD & Chapman EG 7573* (FHO). West Peak of Sapitwa, *Chapman JD & Chapman EG 8163* (FHO). Namisili, above Sombani Basin, *Chapman JD & Patel IH 5707* (FHO).

### *Clutia swynnertonii* S.Moore

Much-branched, dioecious shrub, up to 1.5 m high or more. Male flowers cream, 2-3 glands at base of each petal.

**Flowering:** September. **Habitat:** Shrubberies in upland grassland. **Altitude:** c. 2000 m. **Distribution:** Mt. Mulanje, Mozambique (Gorongosa Mt.) and E. & S. Zimbabwe.

**Localities:** Mulosa Valley, *Johnston-Stewart NGB 99* (FHO).

### *Croton sylvaticus* Hochst. ex Krauss

Tree, up to 30 m high. Bole slender and straight. Bark smooth, greenish-brown with grey markings. Leaves ovate, crenate-serrate margin. Flowers greenish-cream.

**Flowering:** November-January. **Fruiting:** January-April. **Habitat:** Forest and forest edge especially near streams. **Altitude:** 750-1400 m. **Distribution:** Throughout tropical Africa and South Africa (KwaZulu-Natal). **Comments:** Briefly deciduous, the leaves turn bronze-yellow in July.

**Localities:** Lower slopes above Esperanza, *Chapman JD & Chapman EG 6701* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6849* (FHO). Glenorchy, *Chapman JD & Chapman EG 7022* (FHO). Chambe Shelf, above Mwana Mulanje, *Chapman JD & Chapman EG 7605* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8719* (FHO). Approach to Chambe West Face shelf, *Chapman JD & Chapman EG 8978* (FHO). Below Chikomwe Hill, near the Likulezi R.C. Catechist training Centre, *Chapman JD, Chapman EG & White F 8437* (FHO).

### *Drypetes gerrardii* Hutch. var. *gerrardii*

Forest tree, up to 35 m high. Bole smooth, grey, slightly fluted lower down. Bark flaking in papery patches. Leaf bases cuneate to rounded, margins shallowly crenate-serrate. Fruits bi-lobed.

**Habitat:** Mid-altitude forest. **Altitude:** 1300-1700 m. **Distribution:** Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Swaziland and South Africa (Transvaal, KwaZulu-Natal, E. Cape Province).

**Localities:** Chambe West Face Shelf, *Chapman JD & Chapman EG 8555* (FHO). Mchese Mt., well up the valley of the Napolo Stream, *Chapman JD & Chapman EG 8677* (FHO). Mchese Mt., Nthambi Gorge, above Misomali, *Chapman JD & Chapman EG 8846* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9150* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9171* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9322* (FHO). Chapaluka path to Chambe Plateau, *Chapman JD & Chapman EG 9543* (FHO).

### *Drypetes gerrardii* Hutch.

var. *grandifolia* Radcl.-Sm.

Similar to var. *gerrardii* but leaves slightly larger, young shoots and petioles sparingly pubescent or glabrous and fruits not lobed.

**Fruiting:** September. **Habitat:** Forest. **Altitude:** c. 1650 m. **Distribution:** Uganda, S.W. Kenya, N.W. Tanzania, Malawi and Angola.

**Localities:** Chisongeli Forest, *Chapman JD & Chapman EG 9316* (FHO).

### *Drypetes natalensis* (Harv.) Hutch.

Tree, up to 15 m high. Leaves elliptic-lanceolate. Flowers and fruits borne on knobbly bumps on the branches and trunk. Flowers greenish. Fruits warty, reddish-orange when ripe.

**Flowering:** October. **Fruiting:** October-December. **Habitat:** Forest understorey. **Altitude:** 550-900 m. **Distribution:** Sudan, Kenya, Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (KwaZulu-Natal).

**Localities:** Lichenya River at T.A.Mabuka's Milonde Court, *Chapman JD 6582* (FHO). Pamba Stream, just above Esperanza, *Chapman JD 6667* (FHO). Chitakali Stream, in the tea estate, *Chapman JD & Chapman EG 6955* (FHO).

### *Drypetes reticulata* Pax

Forest tree, up to 30 m high. Leaf blades entire, shiny on both surfaces. Tertiary nerves more strongly and irregularly reticulate than *Drypetes gerrardii*.

**Habitat:** Riparian and mid-altitude forest. **Altitude:** 1250-1700 m. **Distribution:** Somalia, Kenya, Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Ruu Gorge, *Chapman JD & Chapman EG 8311* (FHO). Chambe West Face, *Chapman JD & Chapman EG 8557* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8818* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8985* (FHO). Muluzi Valley, Chisongeli forest, *Chapman JD & Chapman EG 9285* (FHO). Malilima (Chisongole forest), *Chapman JD & Chapman EG 9533* (FHO).

### *Erythrococca trichogyne* (Müll. Arg.) Prain

Shrub or small tree, up to 5 m high. Capsule with



1-3 lobes, slowly dehiscent to expose 1-3 seeds (covered by a red aril).

**Flowering:** October. **Habitat:** Under *Widdringtonia* forest. **Altitude:** c. 1800 m. **Occurrence:** Local. **Distribution:** Sudan and East Africa, south to Zimbabwe and Angola. **Localities:** Lichenya Plateau, *Dowsett-Lemaire F 247* (BR).

### *Euphorbia depauperata* A.Rich.

var. *depauperata*

Perennial herb with a thick, woody rootstock, producing numerous simple or sparsely branched annual stems, up to about 30 cm. Leaves glabrous, linear-lanceolate to obovate; apices obtuse, apiculate. Inflorescences yellow.

**Flowering:** June. **Fruiting:** June. **Habitat:** Montane grassland. **Distribution:** Widespread throughout tropical Africa. **Comments:** A pyrophyte. **Localities:** Lichenya Plateau path (from Likabula?), *Richards HM 16528* (K).

### *Euphorbia goetzei* Pax

Slightly succulent, soft-wooded shrub, up to 3 m high. Leaves obovate, sparsely pilose on the lower surface and petiole. Cymes in 3-5 branched umbels. Bracts sub-circular.

**Fruiting:** December-March. **Habitat:** Amongst rocks on river banks. **Altitude:** 800-950 m. **Distribution:** S. Ethiopia, Kenya, Tanzania, N. Zambia, Malawi and N. Mozambique. **Localities:** Likabula, *Chapman JD 343* (FHO). Likabula Valley, at the forestry depot, *Chapman JD & Chapman EG 7133* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8989* (FHO).

### *Euphorbia ingens* E.Mey. ex Boiss.

Succulent tree, up to 12 m high. Trunk simple. Branches 4-angled, forming a large, rounded crown.

**Habitat:** *Brachystegia* woodland and rocky outcrops. **Altitude:** up to c. 1200 m. **Occurrence:** Occasional. **Distribution:** Zambia, Malawi, Mozambique, Zimbabwe, Botswana, E. South Africa, Swaziland and E. Angola. **Localities:** Overlooking the entrance to the Nandiwo Gorge, Mchese Mt., *Chapman JD (Photo)* (FHO), Likabula Valley, *Strugnell AM* (personal siting).

### *Euphorbia mlanjeana* Leach

Succulent shrub, with numerous stems from a short trunk, total height up to about 1 m. 5-6 ridges on stem with paired spines. Leaves deciduous. Cymes solitary, simple, subsessile.

**Flowering:** August-September. **Habitat:** In shallow soil over sheet rock or amongst grass. **Altitude:** 1650-1850 m. **Occurrence:** Local. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Lichenya path, *Chapman JD 312* (FHO). Likabula to Lichenya Plateau, at the Munye-Munye, *Chapman JD & Chapman EG 8306* (MO). Lichenya path, *Chapman JD & Tawakali EJ 5521* (FHO).

### *Euphorbia whyteana* Baker f.

Straggly perennial herb, up to about 1 m high. White latex. Narrow, slightly spatulate leaves, densely arranged towards the top of the stem. Inflorescences yellowish.

**Flowering:** August-September. **Habitat:** Growing with bracken and shrubs in upland grassland. **Altitude:** c. 1950 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Path from Thuchila cottage to the Saddle, *Chapman JD 421* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8077* (FHO).

### *Euphorbia zambesiana* Benth. var. *zambesiana*

Perennial herb, about 5 cm high, with a woody, twisted root from which grow numerous, reddish, branched, flowering stems. Bracts pink.

**Flowering:** September. **Habitat:** Burnt miombo woodland. **Altitude:** c. 1100 m. **Distribution:** Tanzania, S. D.R. Congo, Burundi, Rwanda, Zambia, Malawi, Mozambique and Angola. **Comments:** It is among the first plants to appear after burning. Longer, more leafy, prostrate shoots develop after flowering. **Localities:** Above Mulaza Drift Pine Plantation, *Chapman JD & Chapman EG 8869* (FHO).

### *Hymenocardia acida* Tul.

Dioecious shrub or small tree, up to about 8 m high, briefly deciduous. Leaves oblong, softly hairy at least when young. Male inflorescences dense, not branched, crimson coloured.

**Flowering:** October. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 650 m. **Distribution:** Throughout tropical Africa. **Localities:** Thuchila area, Mt. Mulanje, *Chapman JD 466* (FHO). Mt. Mulanje foot, close to the Mulanje Tea Factory, *Chapman JD & Chapman EG 8323* (MO). Near the Likabula timber depot, *Clements JB 134* (FHO).

### *Macaranga capensis* (Baill.) Benth.

Tree up to 30 m high. Leaves large (blades up to 25 cm long × 20 cm wide), broadly ovate, truncate to cordate at the base. Flowers greenish. Fruits subglobose, yellowish-green, smooth.

**Flowering:** October-January. **Fruiting:** October-January. **Habitat:** At edge of and in riparian forest, forest patches in grassland. **Altitude:** 560-1650 m. **Distribution:** From S. Ethiopia to South Africa (E. Cape Province).

**Localities:** Lichenya Plateau, *Chapman JD 325* (FHO). Tributary of Likulezi River, *Chapman JD 445* (FHO). Lichenya F.R., T.A. Mabukas, Milonde Court, *Chapman JD 6607* (FHO). Pamba Stream, above Esperanza, *Chapman JD 6678* (FHO). Chibigula Stream, Glenorchy, *Chapman JD & Chapman EG 7023* (FHO). Napolo Valley, below Mchese Mt., *Chapman JD & Chapman EG 8668* (FHO).

### *Macaranga mellifera* Prain

Forest tree, up to 20 m high. Leaves narrower than those of *Macaranga capensis* and the male inflorescences are more compact. Fruits warty.



**Flowering:** October-November. **Fruiting:** October-November. **Habitat:** Evergreen forest. **Altitude:** 1500-1850 m. **Distribution:** Mt. Mulanje, Mozambique (Gúruè Mts.); E. and S. Zimbabwe.

**Localities:** Likulezi Valley, *Chapman JD 456* (FHO). Lichenya Plateau, Likulezi River, *Chapman JD 470* (FHO). Along the Nessa Path, Lichenya Plateau, *Chapman JD & Chapman EG 8199* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9314* (FHO).

*Mallotus oppositifolius* (Geiseler) Müll. Arg.  
forma *glabrata* (Müll. Arg.) Pax

Much-branched, small tree, up to 10 m high. Leaves opposite, one of each pair long-petiolate. Leaves not lobed but margins sinuate or dentate, 3-nerved at base.

**Flowering:** October. **Fruiting:** January. **Habitat:** Riverine forest. **Altitude:** c. 600 m. **Distribution:** From the Gambia to Sudan and southwards to Zambia, Malawi, Mozambique and Angola.

**Localities:** Lichenya F.R., T.A. Mabukas, *Chapman JD & Chapman EG 7126* (FHO).

*Margaritaria discoidea* (Baill.) Webster

var. *nitida* (Pax) Radcl.-Sm.

Syn. *Phyllanthus discoideus* (Baill.) Müll. Arg.

Shrub or tree, up to 25 m high. Twigs lenticellate. Leaves obovate to elliptic lanceolate, papery. Flowers greenish. Fruits trilocular, golden-brown when ripe.

**Flowering:** October. **Fruiting:** November-February. **Habitat:** *Brachystegia* woodland, transition woodland, lithophytic forest. **Altitude:** 600-1550 m. **Distribution:** Ethiopia and Burundi southwards to Swaziland, South Africa (KwaZulu-Natal) and Angola.

**Localities:** Likulezi Valley, *Chapman JD 495* (FHO). Below the outer, west face of Chambe Peak, *Chapman JD & Chapman EG 7089* (FHO). Likabula River, near the forestry depot, *Chapman JD & Chapman EG 7164* (FHO). Likabula Valley, Nasato Stream source, below Cilemba, *Chapman JD & Chapman EG 7371* (FHO). Likabula Valley, Lichenya Path, *Chapman JD & Chapman EG 8528* (FHO). Lower slopes of Mchese Mt., above the Fort Lister Gap, *Chapman JD & Chapman EG 8913* (FHO). Mchese Mt., Mbawa Valley, *Chapman JD & Chapman EG 9196* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9203* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9225* (FHO).

*Neoboutonia macrocalyx* Pax

Tree, up to about 20 m high. Leaves broadly ovate-suborbicular, cordate at base, stellate-hairy on veins below. Fruits stellate-hairy.

**Fruiting:** September. **Habitat:** Forest. **Altitude:** c. 1650 m. **Distribution:** D.R. Congo, Burundi, Rwanda, East Africa, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Chisongeli forest, *Chapman JD & Chapman EG 9321* (FHO).

*Phyllanthus beillei* Hutch.

Many-stemmed, twiggy shrub, up to 4 m high.

Leaves elliptic-oblong. Always dioecious. Flowers greenish-yellow. Fruits 3-lobed.

**Flowering:** March-July. **Fruiting:** April-July. **Habitat:** Understorey of riparian forest, open rocky river banks. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa. **Comments:** Leaves turn red in July.

**Localities:** Phalombe River, *Chapman JD & Chapman EG 7844* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8647* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8998* (FHO).

*Phyllanthus confusus* Brenan

Shrub, ranging from about 10 cm to 2 m high. Usually monoecious. Leaves small, closely distichous, oblong. Flowers small, greenish-white.

**Flowering:** May-December. **Fruiting:** February. **Habitat:** Forest edge, streambanks, rocky hillsides and paths. **Altitude:** 1750-2300 m. **Occurrence:** Sporadic but common, sometimes locally abundant. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, near the Boma Path, 0.5 mile from the forestry hut, *Chapman JD 5596* (FHO). Thuchila Shelf, *Chapman JD & Chapman EG 7618* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7973* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8237* (FHO). Mulosa River headwaters, at the Naikoto Stream, *Chapman JD & Chapman EG 8801* (FHO). Chinzama, *Chapman JD & Patel IH 5777* (FHO).

*Phyllanthus glaucophyllus* Sond.

Semi-prostrate or erect, tufted perennial herb or sub-shrub, up to 45 cm high. Leaves elliptic-lanceolate to ovate, distichous. Flowers greenish, tinged red. Fruits smooth, pale glaucous-green.

**Flowering:** April. **Fruiting:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 950 m. **Distribution:** Widespread in tropical Africa, extending into South Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 7395* (FHO).

*Phyllanthus nummulariifolius* Poir.

var. *nummulariifolius*

Slender, glabrous, erect or semiscandent shrub, up to 2 m high. Leaves sub-orbicular to ovate-elliptic, paler and somewhat glaucous beneath. Flowers greenish-yellow.

**Flowering:** October-February. **Habitat:** Margins and understorey of evergreen forest. **Altitude:** 600-1900 m. **Distribution:** Eastern Africa from Sudan to South Africa (KwaZulu-Natal).

**Localities:** Lauderdale, *Chapman JD 6602* (FHO). Linji (Upper Lichenya) Plateau, *Chapman JD & Chapman EG 7256* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 9058* (FHO). Lichenya Plateau, Nessa Path forest, *Chapman JD & Chapman EG 9448* (FHO).

*Phyllanthus ovalifolius* Forssk.

Climbing shrub or liane, up to 10 m or more. Leaves oblong, distichous. Fruits dark purple.



**Fruiting:** November-May. **Habitat:** Edge of stream-fringing forest. **Altitude:** c. 800 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Linji Stream, at Likabula, *Chapman JD & Chapman EG 7017* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8539 & 8938* (FHO).

### *Phyllanthus polyanthus* Pax

Shrub or small tree, forking low down, up to 4.5 m high. Slender, leafy shoots borne on stout, spiky spur shoots. Leaves ovate, acute to sub-acute. Fruits up to 4 cm in diameter, green becoming brown.

**Fruiting:** June. **Habitat:** Rocky streamside. **Altitude:** c. 1400 m. **Occurrence:** Local **Distribution:** Cameroon, Gabon, Central African Republic, Congo, D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique, South Africa and Angola.

**Localities:** Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9138* (FHO).

### *Phyllanthus reticulatus* Poir.

var. *glaber* (Baill.) Müll. Arg.

Much-branched, deciduous, glabrous, scandent shrub or small tree, up to about 5 m high. Leafy and fertile shoots borne on short, stumpy spurs. Flowers reddish. Fruits green, ripening black.

**Flowering:** July. **Fruiting:** July. **Habitat:** Mixed and *Brachystegia* woodland. **Altitude:** 600-850 m. **Distribution:** Throughout tropical Africa.

**Localities:** Mchese Mt., *Chapman JD 618* (FHO). Foot of Mchese Mt., near Phalombe, *Chapman JD & Chapman EG 8662* (FHO).

### *Pseudolachnostylis maprouneifolia* Pax

var. *glabra* (Pax) Brenan

Deciduous, glabrous, dioecious tree, up to about 9 m high. Leaves red when young, elliptic-ovate, margins undulating or irregularly crimped.

**Flowering:** September. **Habitat:** Miombo woodland. **Altitude:** c. 950 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal), Namibia and Angola.

**Localities:** Lower slopes of Mchese Mt., near Bwaibwai forest village, *Chapman JD & Chapman EG 8890* (FHO).

### *Sapium ellipticum* (Hochst. ex Krauss) Pax

Spreading, evergreen tree, up to 15 m or more with drooping branches. Bark smooth with long, parallel striations. Fruit 2-lobed, smooth, laterally compressed.

**Flowering:** July. **Fruiting:** October-February. **Habitat:** Edge of stream-fringing forest, *Brachystegia* woodland, rocky river banks. **Altitude:** 750-1250 m. **Distribution:** From Guinea to Ethiopia, south to Angola and South Africa (KwaZulu-Natal).

**Localities:** Likabula Forest Station, *Chapman JD 340* (FHO). Lauderdale, *Chapman JD 6502* (FHO). Lower slopes

above Esperanza, Pamba Stream, *Chapman JD 6673* (FHO). Likabula valley, Nasato Stream source, *Chapman JD & Chapman EG 7457* (FHO). Malere Rock, Thuchila River at the F.R. Boundary, *Chapman JD & Chapman EG 7710* (FHO). Close to the west bank of the Phalombe Stream, *Chapman JD & Chapman EG 7804* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8474* (FHO).

### *Tragiella natalensis* (Sond.) Pax & K. Hoffm.

Herbaceous, stinging twiner. Leaves elliptic-ovate, pubescent, serrated margin. Flowers greenish-yellow.

**Flowering:** December. **Habitat:** Riverine forest. **Altitude:** c. 800 m. **Distribution:** Sudan, East Africa, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal, E. Cape Province).

**Localities:** Chitakali Stream, *Chapman JD & Chapman EG 6937* (FHO).

### *Uapaca kirkiana* Müll. Arg.

Evergreen tree, up to 12 m high with a short, clear bole and rounded crown. Leaves coriaceous, broadly obovate, up to 27 cm long  $\times$  17 cm wide, margin undulate. Fruit subglobose, reddish-brown.

**Fruiting:** July-August. **Habitat:** *Brachystegia* woodland, often co-dominant. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Mchese Mt., Nandiwo valley, *Chapman JD & Chapman EG 9191* (FHO). Likabula Valley, *Strugnell AM s.n.* (Photo, FHO).

### *Uapaca nitida* Müll. Arg. var. *nitida*

Tree, up to about 10 m high. Leaves with long petioles, elliptic-oblong, rounded at apex, glabrous. Flowers greenish-yellow.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-950 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Burundi, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likabula, *Chapman JD 348* (FHO). Likabula Valley, near the forestry depot, *Chapman JD & Chapman EG 7321* (FHO).

### *Uapaca sansibarica* Pax

Evergreen tree, up to 25 m high. Leaves obovate to oblanceolate, rounded at apex, cuneate at base, narrower than those of *U. kirkiana*. Fruits ellipsoid, green becoming yellow or reddish.

**Flowering:** March. **Fruiting:** Beginning March. **Habitat:** *Brachystegia* or transition woodland. **Altitude:** 600-900 m. **Distribution:** D.R. Congo, Burundi, Sudan, Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and **Localities:** Likabula, *Chapman JD 531* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8377* (FHO). The old fort at the Fort Lister Gap, *Chapman JD & Chapman EG 8600* (FHO).



**FABACEAE: CAESALPINIOIDEAE**

(Leguminosae: Caesalpinioideae)

Refs. Chikuni, 1998; Lock, 1988.

***Afzelia quanzensis* Welw.**

**Tree**, up to 35 m high with a spreading crown. **Leaflets** ovate-elliptic to oblong. **Flowers** green, red inside, in an erect inflorescence. **Pod** straight.

**Fruiting:** March. **Habitat:** Woodland and rocky hillside. **Altitude:** c. 800 m. **Distribution:** Somalia, D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal) and Swaziland.

**Localities:** Chikomwe Hill, Likulezi, *Chapman JD & Chapman EG 7717* (FHO). Near the Likabula timber depot, *Clements JB 57* (FHO).

***Bauhinia petersiana* Bolle**

**Shrub** or tree, up to about 8 m high. **Leaves** conspicuously bilobed. **Flowers** white, sometimes with pink spots. **Calyx** tube 2-4 cm long.

**Flowering:** September-November. **Habitat:** Miombo woodland. **Altitude:** c. 600-850 m. **Occurrence:** Common and widespread in the woodland surrounding the massif. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Near the Mulanje Tea Factory, *Chapman JD & Chapman EG 8302* (MO). Likabula Valley, *Chapman JD & Chapman EG 8956* (FHO). East side of Mulanje Mt, *Topham P 219* (FHO).

***Brachystegia boehmii* Taub.**

**Tree**, up to 15 m high. Foliage mid-green, pendulous, in tufts. **Flowers** yellowish-green, sweet-smelling. **Pods** oblong to obovate, dark brown, held above the crown.

**Flowering:** November-December. **Fruiting:** May-October. **Habitat:** Deciduous *Brachystegia* woodland. **Altitude:** 800-1000 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Angola. **Comments:** Briefly deciduous in mid-September to October, when the pods are shed in vast numbers.

**Localities:** Near Mwana Mlanje, *Chapman JD 369* (FHO). Likabula Valley, Lichenya path, *Chapman JD & Chapman EG 7159* (FHO). Tinyade, Likulezi, *Chapman JD & Chapman EG 7781* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9420* (FHO).

***Brachystegia floribunda* Benth.**

**Tree**, up to 12 m high. **Leaflets** light green, in 2-5, widely-spaced pairs. **Inflorescences** often on old wood. **Flowers** greenish-white. **Pods** thinly woody, brown with a purplish tinge.

**Fruiting:** March onwards. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Angola.

**Localities:** Likabula, *Chapman JD 344* (FHO)

***Brachystegia manga* De Wild.**

**Tree**, up to 20 m high. **Leaflets** grey-green, in 3-5 widely-spaced pairs, square to ovate. **Flowers** small, yellowish-green. **Pods** purplish-brown, thinly woody, pendulous.

**Fruiting:** February-June. **Habitat:** *Brachystegia* woodland. **Altitude:** 750-900 m. **Occurrence:** Common to locally dominant. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Likabula Valley, *Chapman JD 338 & 7180* (FHO). Chikomwe Hill, Likulezi Catechist Centre, *Chapman JD & Chapman EG 7719* (FHO). At the old fort in the Fort Lister Gap, *Chapman JD & Chapman EG 8601* (FHO).

***Brachystegia spiciformis* Benth.**

**Tree**, up to 25 m high. **Leaflets** deep green, shiny when glabrous, in 4-5(8) pairs increasing in size distally. **Flowers** yellowish-white, very fragrant. **Pods** mid-brown, apical beak conspicuous.

**Flowering:** September-October. **Fruiting:** June. **Habitat:** *Brachystegia* woodland. **Altitude:** 650-1850 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Burundi, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Thuchila Plateau, *Chapman JD 528* (FHO). Thuchila River, *Chapman JD & Chapman EG 7712* (FHO). Approaching the Chiphalombe Shelf, *Chapman JD & Chapman EG 8058* (FHO). Mimosa Tea Research Station at the Segregation Plot, *Chapman JD & Chapman EG 8419* (FHO). Limbuli, *Chapman JD & Chapman EG 9371* (FHO).

***Brachystegia tamarindoides* (Welw. ex Benth.)**var. *microphylla* (Harms) ChikuniSyn. *Brachystegia microphylla* Harms

**Tree**, up to 20 m high. **Bark** grey, flaking to expose orange-yellow patches. **Leaflets** small, linear, in 15-60 pairs. **Flowers** greenish-white, with a cinnamon fragrance. **Pods** purplish-brown.

**Flowering:** October. **Fruiting:** May-June. **Habitat:** *Brachystegia* woodland. **Altitude:** 750-1300 m. **Occurrence:** Sporadic to rare. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likulezi Valley, *Chapman JD 511* (FHO). Likulezi River, *Chapman JD & Chapman EG 7641* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9082 & 9265* (FHO). Mchese Mt., near the Nampende Stream, *Chapman JD & Chapman EG 9123* (FHO). Likabula Valley, near Likabula House, *Chapman JD & Chapman EG 9353* (FHO).

***Brachystegia utilis* Burt Davy & Hutch.**

**Tree**, up to about 15 m high. **Leaflets** dark green, in 5-10 pairs, the larger leaflets in the middle. **Flowers** small, greenish. **Pods** oblong, pinkish-brown.

**Flowering:** October. **Fruiting:** March onwards. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 800 m. **Occurrence:**



Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.  
**Localities:** Likabula, *Chapman JD 342* (FHO).

***Burkea africana* Hook.**

Deciduous tree, up to 20 m high. Branchlets rather thick with prominent leaf scars, rusty tomentum on young shoots. Young leaves silvery, mature leaflets broadly ovate. Flowers white or pale green. Pods brown, elliptic.

**Flowering:** From November. **Fruiting:** June. **Habitat:** *Brachystegia* woodland, rocky hillside. **Altitude:** 600-900 m. **Distribution:** Widespread in tropical Africa except for the forested regions, South Africa (Transvaal) and Namibia. **Localities:** Chikomwe Hill, Likulezi Catechist Centre, *Chapman JD & Chapman EG 7720* (FHO). Mimosa Tea Research Station, at the Segregation Plot, *Chapman JD & Chapman EG 8391* Low down Likabula Valley, *Chapman JD & Chapman EG 8932* (FHO). Likabula Valley, along the skyline path, *Chapman JD & Chapman EG 9417* (FHO).

***Cassia angolensis* Hiern**

Deciduous tree, up to 25 m high. Leaflets emarginate at apex. Flowers golden yellow. Pods cylindrical, black, up to 70 cm long.

**Flowering:** October. **Habitat:** Riparian forest. **Altitude:** c. 1400 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Angola. **Localities:** Likulezi River, *Chapman JD 453* (FHO).

***Chamaecrista mimosoides* (L.) E.Greene**

Syn. *Cassia mimosoides* L.

Herb, up to 1.5 m high. Plant usually hairy. Leaves linear. Flowers yellow. Pods linear, usually hairy.

**Flowering:** March. **Habitat:** Stream-edge in woodland. **Altitude:** c. 750 m. **Distribution:** Widespread in tropical Africa. **Localities:** Likabula House, *Lawrence G 279* (K).

***Chamaecrista polytricha* (Brenan) Lock**

Syn. *Cassia polytricha* Brenan

Sub-shrub, 30-50 cm high. Flowers yellow.

**Fruiting:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 9036* (FHO).

***Erythrophleum africanum* Harms**

Tree, up to 12 m high. Leaflets obtuse or rounded at apex. Flowers cream. Pods dehisce simultaneously along both sutures, stipe central.

**Habitat:** *Brachystegia* woodland. **Distribution:** Senegal to Sudan, southwards to Zimbabwe and Namibia but absent from Kenya and Uganda. **Localities:** East side of Mulanje Mt., *Topham P 239* (FHO).

***Erythrophleum suaveolens* (Guill. & Perr.) Brenan**

Tree, up to 30 m high. Leaflets acuminate at apex. Flowers yellowish-white to greenish. Pods dehisce initially along one suture only, stipe lateral.

**Flowering:** From November. **Fruiting:** June-November. **Habitat:** Edge of riverine forest. **Altitude:** 550-900 m. **Distribution:** Widespread in tropical Africa. **Localities:** T.A. Mabuka's Milonde Court, *Chapman JD & Chapman EG 6620* (FHO). Thuchila River, *Chapman JD & Chapman EG 7713* (FHO). Near the Likabula timber depot, *Clements JB 61* (FHO). Ruo Gorge, *Johnston-Stewart NGB 263* (FHO).

***Julbernardia globiflora* (Benth.) Troupin**

Syn. *Isoberlinia globiflora* (Benth.) Greenway

Flat-topped tree, up to 15 m high. Leaflets in 4-6 pairs, narrowly oblong-elliptic. Flowers white, the larger petal ovate. Pods oblong, brown-tomentose.

**Flowering:** January-February. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-950 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Botswana. **Localities:** Foot of Linji Cliffs, *Chapman JD & Chapman EG 7012* (FHO). Mini-Mini, *Chapman JD & Chapman EG 8402* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9492* (FHO). East side of Mulanje Mt., *Topham P 214* (FHO).

***Peltophorum africanum* Sond.**

Tree, up to 14 m high, branching at about 3 m from the ground. Leaflets mucronate, grey-tomentose below, in 10-28 pairs. Flowers yellow, up to 2 cm in diameter. Pods narrowly elliptic-oblong, flattened, winged along both sutures.

**Fruiting:** August. **Habitat:** Evergreen fringing forest. **Altitude:** c. 900 m. **Distribution:** Southern tropical Africa and South Africa. **Localities:** N.A. Nkanda's Court, *Chapman JD 399* (FHO).

***Pterolobium stellatum* (Forssk.) Brenan**

Scrambling shrub or woody climber, up to 25 m high, young stems and leaves armed with reflexed prickles. Leaves finely pinnate. Leaflets narrowly oblong, in 5-13 pairs. Flowers creamy-yellow, sweetly scented. Fruit a samara, red, winged.

**Fruiting:** June-July. **Habitat:** Riparian vegetation, forest edge and transition woodland. **Altitude:** 1050-1450 m. **Distribution:** Eastern Africa from Ethiopia to South Africa (Transvaal), including E. D.R. Congo and Rwanda. **Localities:** North slopes of Mt. Mulanje & Mchese Mt., *Chapman JD & Chapman EG 7814* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9205* (FHO).

***Senna petersiana* (Bolle) Lock**

Syn. *Cassia petersiana* Bolle

Tree, up to 12 m high. Stipules persistent, semi-



cordate to reniform. Flowers bright yellow. Pods indehiscent, compressed, linear.

**Flowering:** April-May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Common. **Distribution:** Eastern Africa from Ethiopia and the Sudan to Mozambique and South Africa (Transvaal) and in Cameroon and Central African Republic.

**Localities:** Lower slopes of Mt. Mulanje, *Chapman JD 373* (FHO). Likabula Valley, *Chapman JD & Chapman EG 7442* (FHO).

### *Senna singueana* (Delile) Lock

Syn. *Cassia singueana* Delile

Shrub or small tree, up to about 5 m high. Leaves and petioles softly hairy. Leaflets 6-10 pairs, elliptic to oblong-elliptic. Flowers deep yellow, appearing as the leaves fall. Pods subcylindric or slightly compressed.

**Flowering:** April-July. **Habitat:** Woodland. **Altitude:** 800-1000 m. **Distribution:** Widespread in tropical Africa, except in the rain forest areas.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9217* (FHO). Chikomwe Hill, Likulezi R.C. Catechist Training Centre, *Chapman JD & White F 8440* (FHO).

## FABACEAE: MIMOSOIDEAE

(Leguminosae: Mimosoideae)

Ref. Timberlake et al. 1999.

### *Acacia abyssinica* Hochst.

Flat-topped tree, up to about 15 m high. Pale yellow, papery bark on young trees become smooth brown to black in older trees. White flowers in globose inflorescences. Pods grey to brown, with longitudinal wavy striations.

**Fructing:** March. **Habitat:** In good soil in valleys and pockets high up on the outer slopes. **Altitude:** c. 1500 m. **Distribution:** Ethiopia southwards through East Africa to **Localities:** Outer slopes of Mulanje and Mchese Mts., *Chapman JD 629* (FHO).

### *Acacia goetzei* Harms ssp. *goetzei*

Small tree, up to about 10 m high but may reach 12 m occasionally. Tough, curved, opposite thorns on trunk and branches. Leaflets broad and rounded. Flowers creamy-white in axillary spikes. Pods wide, straight, often with a wavy margin.

**Flowering:** November. **Fructing:** July. **Habitat:** Mixed, dry woodland. **Altitude:** 750-850 m. **Occurrence:** Infrequent and local. **Distribution:** Ethiopia, D.R. Congo, Kenya, Tanzania, Zambia, Malawi, N. Mozambique, Zimbabwe and Angola. **Comments:** Collections only from the northwestern side of Mulanje round to Mchese on the northern side (i.e. dry side).

**Localities:** Mchese Mt., Mulosa Stream, east side of mountain, *Chapman JD 616* (FHO). Chikomwe Hill, R.C. Catechist training Centre, Likulezi, *Chapman JD &*

*Chapman EG 7677* (FHO, K). Likabula Valley, near the C.C.A.P. House, *Chapman JD & Chapman EG 8538* (FHO, K). Low down in the Likabula Valley, *Chapman JD & Chapman EG 8933* (FHO, K).

### *Acacia karroo* Hayne

Small, erect tree, up to about 10 m high. Long, straight, paired thorns at the nodes, whitish with brown tips. Leaflets dark green. Flowers yellow, scented, in globose inflorescences. Pods slender and sickle-shaped in bunches.

**Fructing:** August. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Occurrence:** Only recorded from the Fort Lister Gap. **Distribution:** Widespread in southern Africa from S. Malawi and S. Zambia to South Africa and Angola. **Localities:** Fort Lister Gap, *Chapman JD 625* (FHO).

### *Acacia montigena* Brenan & Exell

Canopy liane, up to 30 m high. Young stems densely fulvous-pubescent, older stems armed with deflexed prickles. Flowers cream, in heads which form part of a pyramidal inflorescence. Pods dark brown, dehiscent.

**Flowering:** December. **Fructing:** September. **Habitat:** Montane forest. **Altitude:** c. 1350 m. **Distribution:** Ethiopia, D.R. Congo, Rwanda, Uganda, Kenya, Tanzania, Zambia and Malawi. **Comments:** Collections are from the forests on the south and southwestern (wet) side of Mulanje.

**Localities:** Ruo Gorge, *Chapman JD & Chapman EG 8309* (K). Muluzi Valley, Chisongeli forest, *Chapman JD & Chapman EG 9284* (FHO).

### *Acacia nilotica* (L.) Delile

ssp. *kraussiana* (Benth.) A.F.Hill

Small tree, up to 8 m high, with a low, spreading, rounded crown. Paired spines, up to 4.5 cm long, curving slightly backwards. Flowers yellow, in globose heads. Pods black when ripe, up to 15 cm long, curved and constricted between the seeds.

**Flowering:** October. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Very sporadic. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe, E. Botswana, South Africa (KwaZulu-Natal), N. Namibia and S.W. Angola.

**Localities:** Likabula Forest Station, *Chapman JD 477* (K, MAL). Likabula Valley, *Chapman JD & Chapman EG 9072* (FHO).

### *Acacia pilispina* Pic.-Serm.

Shrub or small tree, up to 8 m high. Bark dark brown, scaling to reveal the buff, powdery underbark. Flowers creamy-white and fragrant, in globose heads. Pods grey-brown, finely and longitudinally veined.

**Flowering:** May-June. **Habitat:** By rivers and in miombo woodland. **Altitude:** c. 800-900 m. **Occurrence:** Sporadic.



**Distribution:** Ethiopia, D.R. Congo, Tanzania, Zambia, Malawi and Mozambique. **Comments:** Collections only from the N.W. (dry) side of Mulanje and Mchese Mt.

**Localities:** Likulezi, *Chapman JD & Chapman EG 7679* (FHO, K). Foot of Mulanje near Tinyade, *Chapman JD & Chapman EG 8633* (FHO, K). Mchese Mt., near the Nabwato Stream, *Chapman JD & Chapman EG 9120* (FHO).

*Acacia polyacantha* Willd.

ssp. *campylacantha* (A. Rich.) Brenan

Medium to large tree, up to 30 m high, with layered crown. Paired, hooked, flattened thorns. Flowers creamy-white in axillary spikes. Pods straight, flat, dehiscent.

**Fruiting:** June-August. **Habitat:** River banks. **Altitude:** 750-1350 m. **Distribution:** From Gambia to Sudan, East Africa to N. Botswana, Zimbabwe and northern South Africa. **Comments:** Collections only from the northern (dry) side of Mchese Mt.

**Localities:** Mchese Mt., Nandiwo area, *Chapman JD 621* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9118* (FHO).

*Acacia sieberiana* DC.

var. *woodii* (Burt Davy) Keay & Brenan

Tree, up to about 15 m high, with a flattened, spreading canopy. Thorns mainly on young branches, paired and straight. Flowers white, sweet-smelling in globose heads. Pods dark yellowish-brown, oval in cross-section, not dehiscent on the tree.

**Fruiting:** April-August. **Habitat:** Woodland, forest edge and cultivated land. **Altitude:** 750-1350 m. **Occurrence:** Sporadic. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal, KwaZulu-Natal) and Angola. **Comments:** Collections only from the northwestern side of Mulanje round to Mchese on the northern side (i.e. dry side).

**Localities:** Lower slopes of Mulanje, above H.Q. of N.A. Nkauda, *Chapman JD 353* (FHO). Mchese Mt., Nandiwo area, *Chapman JD 620* (FHO). Mulanje foothills near Tinyade, *Chapman JD & Chapman EG 7736* (FHO). Tinyade, Likulezi, *Chapman JD & Chapman EG 7737* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9117* (FHO).

*Albizia adianthifolia* (Schumach.) W.Wight

Tree, up to 40 m high with flattened crown. Leaflets in 5-8 pairs, lower surface and rhachis densely fulvous-pubescent. Flowers white fading to orange, highly scented. Pods dehiscent, pale brown, densely pubescent.

**Flowering:** September-October. **Fruiting:** July-August. **Habitat:** Riparian forest, also planted as a shade tree on tea estates. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa, extending into South Africa (E. Cape Province). **Comments:** This tree is briefly deciduous in August.

**Localities:** Glenorchy, *Chapman JD 439* (FHO). Lauderdale, upper boundary, *Chapman JD & Chapman EG 6501* (FHO). Ruu Gorge, *Johnston-Stewart NGB 143* (FHO).

*Albizia amara* (Roxb.) Boiv.

ssp. *sericocephala* (Benth.) Brenan

Deciduous tree, up to about 10 m high, with a spreading habit. Small leaflets in numerous pairs. Flowers white. Pod brown and puberulous, indehiscent.

**Fruiting:** July. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 750 m. **Distribution:** From Sudan and Eritrea southwards to Botswana and South Africa (Transvaal).

**Localities:** Mchese Mt., *Chapman JD 599* (FHO).

*Albizia antunesiana* Harms

Tree, up to about 16 m high. Leaflets glabrous, glaucous to greyish beneath. Flowers greenish-yellow with whitish filaments. Pods dehiscent, pale brown, glabrous.

**Habitat:** Stream-fringing forest. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, Namibia and Angola.

**Localities:** Ruu, *Chapman JD & Chapman EG 7479* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 7909* (FHO).

*Albizia glaberrima* (Schumach.&Thonn.) Benth.

var. *glabrescens* (Oliv.) Brenan

Tree, up to about 18 m high. Leaflets medium to large, in 3-6 pairs, distal ones largest. Flowers white. Pod pale brown, indehiscent.

**Fruiting:** July. **Habitat:** Riparian forest and semi-deciduous forest. **Distribution:** D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Thuchila River, Malere Rock, *Chapman JD 390* (FHO). Nasato Stream, between Glenorchy and Likabula River, *Chapman JD & Chapman EG 7038* (FHO). Lichenya F.R., *Chapman JD & Chapman EG 7127* (FHO). F.R. boundary by Biya Stream, *Chapman JD & Chapman EG 7726* (FHO).

*Albizia gummifera* (J.F.Gmel.) C.A.Sm.

Briefly deciduous, large stream-bank tree, up to 35 m high. Leaflets in 5-7 pairs, auricled at base on proximal side. Flowers white. Pods pale brown to reddish, dehiscent.

**Flowering:** September. **Fruiting:** June-July. **Habitat:** Riverine forest. **Altitude:** 850-1650 m. **Distribution:** Mountains of Cameroon and S.E. Nigeria; Ethiopia and Sudan to Mozambique. **Comments:** Pods fall as the flowers and new foliage appear in September.

**Localities:** Thuchila River, *Chapman JD 433* (FHO). Mchese Mt., Naminjiwa Valley, *Chapman JD 595* (FHO). Mulosa Gorge below Manga, *Chapman JD & Chapman EG 6574* (FHO). Pamba Stream, above Esperanza, *Chapman JD & Chapman EG 6665* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7514* (FHO). Approach to the Phalombe Gorge, *Chapman JD & Chapman EG 7838* (FHO). Slopes below Chiphalombe Shelf, *Chapman JD & Chapman EG*



8081 (FHO). Likabula Valley, *Chapman JD & Chapman EG 8466* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8708A* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8851* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9097* (FHO).

***Albizia lebbeck* (L.) Benth.**

Syn. *Acacia lebbeck* (L.) Willd.; *Mimosa lebbeck* L.

Tree, up to 15 m high. Leaflets medium to large, subglabrous. Pods pale yellow-brown, marked with bumps.

**Fruiting:** June. **Habitat:** Miombo woodland. **Altitude:** c. 800 m. **Distribution:** Native to S.E. Asia but naturalised in many parts of Africa, including Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Mchese Mt., near the Nandiwo Stream, *Chapman JD & Chapman EG 9166* (FHO).

***Albizia lebbekoides* (DC.) Benth.**

Slender tree, up to about 5 m high (in this location). Branches sometimes drooping with soft, dense foliage. Leaves with 5-7 pinnae and 10-25 pairs of asymmetric leaflets per pinna. Flowers pale green. Pods dark brown, glabrous.

**Fruiting:** March. **Habitat:** Dry, rocky hillside. **Distribution:** Native to Asia, but introduced into Africa and the Neotropics.

**Localities:** Mini-Mini, *Chapman JD & Chapman EG 8406* (FHO).

***Albizia petersiana* (Bolle) Oliv.**

Small tree, up to 5 m high. Leaflets in 2-5 pairs, usually almost glabrous. Flowers white to pink, virtually glabrous. Pods dehiscent, red-purple to brown, glabrous.

**Habitat:** On dry hillside on overgrazed land. **Distribution:** East Africa, Malawi, Mozambique and Zimbabwe, South Africa (Transvaal, KwaZulu-Natal). **Comments:** Only collected from Chikomwe Hill, at the foot of Mt. Mulanje.

**Localities:** Bottom of Chikomwe Hill, Likulezi Catechist Centre, *Chapman JD & Chapman EG 7723* (FHO).

***Albizia schimperiana* Oliv. var. *schimperiana***

Large trees, up to 40 m high, with a flattened crown. Flowers white or pale yellow. Pods flat, indehiscent, brown, up to 25 cm long and 3-4 cm wide.

**Flowering:** October. **Fruiting:** May. **Habitat:** Mid-altitude forest and edges. **Altitude:** c. 1500 m. **Occurrence:** Can be gregarious. **Distribution:** From Ethiopia and Somalia to Mozambique and Zimbabwe.

**Localities:** Chiphalombe Valley, *Chapman JD 575* (FHO). Chiphalombe River, between the gorges, *Chapman JD & Chapman EG 7984* (FHO). Nanchidwa Valley, on the approach to Chisongeli forest, *Chapman JD & Chapman EG 9369* (FHO).

***Albizia tanganyicensis* Baker f.**

Deciduous tree, up to about 15 m high. Old bark peels off in brown papery pieces. Flowers white,

usually produced when leafless. Pods dehiscent, brown, glabrous and flat.

**Fruiting:** May. **Habitat:** Rocky hillsides and sheet rock. **Altitude:** c. 1200 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal) and Angola. **Comments:** Only collected from the dry margins on the northern side of Mulanje and Mchese Mountains.

**Localities:** Chikomwe Hill, Likulezi, *Chapman JD & Chapman EG 7673* (FHO). Chitagoni Hill, *Chapman JD & Chapman EG 8457* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9077* (FHO).

***Albizia versicolor* Welw. ex Oliv.**

Deciduous, spreading tree, up to 20 m high, with a rough, greyish-brown bark. Leaflets large and rounded. Flowers white to greenish-yellow. Pods dehiscent, reddish with a purple bloom, up to 25 cm long and 3-4 cm wide, in bunches of 2 or 4.

**Flowering:** November. **Fruiting:** July. **Habitat:** Dry *Brachystegia* woodland or transition woodland on the lower slopes. **Altitude:** c. 750-900 m. **Occurrence:** Occasional. **Distribution:** D.R. Congo, East Africa, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal, KwaZulu-Natal) and Angola.

**Localities:** Near Thuchila River on lower slopes, *Chapman JD 387* (FHO). Chitakali boundary, *Chapman JD & Chapman EG 6804* (FHO). Chibigula Stream at Chitakali, *Chapman JD & Chapman EG 7025* (FHO). Mimosa Tea Research Station, *Chapman JD & Chapman EG 8400* (FHO). Chitagoni Hill, north of Eldorado, *Chapman JD & Chapman EG 8459* (FHO).

***Dichrostachys cinerea* (L.) Wight & Arn.**

Shrub, up to about 4 m high or more, armed with spines which terminate short lateral branchlets. Inflorescences yellow in apical, hermaphrodite part, pink or mauve in lower neuter part. Pods contorted, in clusters of 2-10.

**Flowering:** September. **Habitat:** Woodland. **Altitude:** c. 950 m. **Occurrence:** Sporadic. **Distribution:** Widespread in Africa.

**Localities:** Mchese Mt., low down the western slopes near Bwaibwai forest village, *Chapman JD & Chapman EG 8891* (FHO, MO).

***Entada abyssinica* Steud. ex A.Rich.**

Small tree, up to 10 m high. Tendrils absent. Flowers creamy-white fading yellowish. Pods straight, up to 39 cm long.

**Flowering:** August. **Habitat:** Tea estate. **Altitude:** c. 750 m. **Distribution:** From Sierra Leone to Eritrea and southwards to Mozambique and Zimbabwe.

**Localities:** Esperanza, *Chapman JD & Chapman EG 8324* (FHO).

***Newtonia buchananii* (Baker) G.Gilbert & Boutique**

Large, canopy tree, up to 40 m high, buttressed at



the base. Bark smooth. Leaflets in 38-67 pairs, pinnae in 12-23 pairs. Flowers white or yellowish in spikes. Pods up to 32 cm long, flat, dehiscing along one side only.

**Flowering:** October. **Habitat:** Riparian forest and mid-altitude forest. **Altitude:** c. 1300 m. **Distribution:** Cameroon and S.E. Nigeria; E. D.R. Congo through East Africa to Mozambique and Zimbabwe and Angola.

**Localities:** Banks of the Mulosa Stream, below the entrance to the Crater, *Chapman JD & Chapman EG 6503* (FHO). Slopes below Chiphalombe Shelf, *Chapman JD & Chapman EG 8082* (K).

*Parkia filicoidea* Welw. ex Oliv.

Briefly deciduous, canopy or emergent tree, up to 40 m high. Leaflets oblong in 10-18 pairs, 4-11 pinnae. Inflorescences red, 'light-bulb' shaped. Pods, up to 60 cm long and 3 cm wide, with margins slightly constricted between the seeds.

**Flowering:** October. **Habitat:** Forest edge, woodland or relics of woodland (now tea estates). **Distribution:** Widespread in tropical Africa.

**Localities:** T.A. Mabuka's Milonde Court, *Chapman JD & Chapman EG 6622* (FHO). Esperanza, along the Pamba Stream, *Chapman JD & Chapman EG 6697* (FHO). Near Likabula timber depot, *Clements JB 60* (FHO).

**FABACEAE: FABOIDEAE**  
(Leguminosae: Papilionoideae)  
*Refs.* Baker, 1926; Brenan, 1953; Brummitt, 1966; Gillett, 1958; Mackinder, 1993; Pasquet, 1993; Schrire, 1998, 2000; Verdcourt, 1974, 1993.

*Abrus precatorius* L. ssp. *africanus* Verdc.

Woody climber, up to 4 m high. Flowers in dense racemes. Pods broadly oblong, densely pubescent. Seeds red and black.

**Fructing:** May. **Habitat:** *Brachystegia* woodland and forest. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8520* (FHO). Mchese Mt., Nandiwo Valley. *Chapman JD & Chapman EG 9089* (FHO).

*Adenocarpus mannii* (Hook.f.) Hook.f.

Shrub, up to 5 m high. Leaves trifoliate, hairy below. Flowers yellow in dense inflorescences. Pods straight with a downwards-pointing beak, hairy.

**Flowering:** August. **Fructing:** September-November. **Habitat:** Forest edge and open cedar forest, among shrubs and bracken. **Altitude:** 1700-2000 m. **Occurrence:** Common. **Distribution:** Cameroon, S.E. Nigeria, Ethiopia to Malawi and Angola.

**Localities:** Lichenya Plateau, near the C.C.A.P. Hut, *Chapman JD & Chapman EG 8231* (FHO). Between

Thuchila and Ruvo Valley cottages, *Jackson G 1888* (FHO). Lichenya Plateau, path to Nyazimbiya, *Patel IH 856* (FHO).

*Aeschynomene abyssinica* (A.Rich.) Vatke

Erect, widely-branched, slightly sticky shrub, up about 2 m high. Flowers yellow in lax inflorescences. Pods glabrous, rounded, compressed.

**Flowering:** March-May. **Fructing:** May-June. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Common. **Distribution:** Cameroon, Nigeria, Ethiopia to Mozambique and Zimbabwe.

**Localities:** Likulezi Valley, *Chapman JD & Chapman EG 7522* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8996* (FHO).

*Aeschynomene glauca* R.E.Fr.

Dwarf shrub, up to 30 cm high from a woody rootstock. Leaflets linear-oblong, in 12-24 pairs, glaucous. Flowers yellow. Pods often of one rounded section (sometimes 2 sections joined by a very narrow neck), glabrous.

**Flowering:** October. **Habitat:** *Brachystegia* woodland. **Occurrence:** Locally abundant. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Karama village, between Fort Lister Gap and the Phalombe Gorge, *Chapman JD & Chapman EG 8900* (FHO).

*Aeschynomene megalophylla* Harms

Shrub, up to about 4 m high. Young stems, leaf rhachis and peduncles covered with short, sticky hairs. Leaflets up to 3-4 cm long, usually in about 7 pairs. Flowers orange-yellow in lax inflorescences. Pods linear, glabrous, constricted between the seeds, especially on one side.

**Flowering:** April-May, December. **Habitat:** Thickets in upland grassland, forest edges and forest regrowth. **Altitude:** 1400-2300 m. **Occurrence:** Common. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Chambe Peak, *Chapman JD 5625* (FHO). Likabula Valley, Lichenya path, *Chapman JD & Chapman EG 7000* (FHO). Likulezi, Ng'ono waterfall, *Chapman JD & Chapman EG 7533* (FHO).

*Aeschynomene nodulosa* (Baker) Baker f.

Shrub or small tree, up to 6 m high, with blackish-brown, rough bark. Leaflets up to about 8 mm long, narrowly-oblong. Flowers yellow. Pods linear, sparsely hairy, constricted between the seeds especially on one side.

**Flowering:** May-October. **Fructing:** From October. **Habitat:** *Brachystegia* woodland, grassland. **Altitude:** 1250-1650 m. **Occurrence:** Sporadic. **Distribution:** S. Malawi.

**Localities:** Chambe West Face Shelf, *Chapman JD & Chapman EG 7671* (FHO). Sombani path, *Chapman JD & Chapman EG 8787* (FHO). Nancidwa Valley, below Chisongali Forest, *Chapman JD & Chapman EG 9366* (FHO).



*Amphicarpaea africana* (Hook.f.) Harms  
Perennial, climbing herb, at least 3 m long. Slender stems covered in reflexed, ferruginous hairs. Flowers magenta and violet. Pods linear-oblong, glabrous on the faces but densely ciliate on the margins.

**Flowering:** June. **Habitat:** Forest clearing. **Distribution:** Widespread in tropical Africa.

**Localities:** Great Ruvo Gorge, *Robinson EA 5372* (K).

*Argyrolobium rupestre* (E.Mey.) Walp.

ssp. *aberdaricum* (Harms) Polhill

Small, procumbent, perennial herb. Roots tuberous. Flowers yellow. Calyx sparsely to conspicuously hairy, but not dense. Pods linear, hairy.

**Flowering:** November. **Habitat:** Regularly burnt, montane grassland. **Occurrence:** Sporadic. **Distribution:** Ethiopia, E. D.R. Congo, Rwanda, Uganda, Kenya, Tanzania, Zambia and Malawi.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 8285* (MO, MAL).

*Canavalia africana* Dunn

Herbaceous climber, reaching 7 m or more or sprawling over rocks and grass. Flowers mauve, white or green towards the base of the petals. Pods linear-oblong, compressed, ferruginous-pubescent.

**Flowering:** April. **Habitat:** Edge of stream-fringing forest or bush. **Altitude:** c. 600-850 m. **Distribution:** Widespread in tropical Africa and N.E. South Africa.

**Localities:** Ruvo, *Chapman JD & Chapman EG 7546* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9024* (FHO). Likabula forest, *Salubeni AJ 1642* (K).

*Craibia brevicaudata* (Vatke) Dunn

ssp. *baptistarum* (Büttner) J.B.Gillett

Tree, up to 18 m high. Branchlets reddish-brown. 5-7 pale green leaflets. Flowers white. Golden-brown indumentum on inflorescence.

**Flowering:** September-December. **Fruiting:** July. **Habitat:** Under or middle storey of forest, often near rivers. **Altitude:** 800-1400 m. **Distribution:** S. D.R. Congo, Tanzania, Zambia, Malawi, Zimbabwe and Angola. **Comments:** Very conspicuous when flowering.

**Localities:** Likabula River, at the forestry depot, *Chapman JD & Chapman EG 7139* (FHO). Likulezi River, at the crossing near Likulezi farm, *Chapman JD & Chapman EG 7426* (FHO). Phalombe River bank, *Chapman JD & Chapman EG 7849* (FHO). Chiphalombe River gorge, *Chapman JD & Chapman EG 7910* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9096* (FHO). Chisongeli Forest, Muluzi Valley, *Chapman JD & Chapman EG 9307* (FHO).

*Crotalaria argyrolobioides* Baker

Sub-shrub, up to about 45 cm high. Leaves trifoliate, small, pale green. Flowers yellow, crowded at the stem apex. Pods round to shortly cylindric.

**Flowering:** April-May. **Fruiting:** May-June. **Habitat:** Higher parts of *Brachystegia* woodland. **Altitude:** c. 1600 m. **Occurrence:** Common. **Distribution:** D.R. Congo (Katanga), Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Likabula Valley, *Chapman JD 580* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 9059* (FHO).

*Crotalaria cleomifolia* Welw. ex Baker

Shrubby, much-branched, perennial herb with a woody base, up to about 2.5 m high. Leaves 3-5-foliate, leaflets elliptic. Flowers yellow, standard becoming red. Pods cylindrical.

**Flowering:** June-July. **Habitat:** *Brachystegia* woodland or cultivated hillsides. **Altitude:** c. 750 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula River, near the C.C.A.P. House, *Blackmore S 849* (K). Bottom of the Little Ruvo path, *Brummitt RK 12359* (K).

*Crotalaria gazensis* Baker f. ssp. *gazensis*

An almost prostrate sub-shrub. Flowers bright yellow.

**Flowering:** February. **Habitat:** Beside a waterfall. **Altitude:** c. 1900 m. **Distribution:** Mt. Mulanje, Mozambique and Zimbabwe (mainly along the mountains of the Mozambique-Zimbabwe border).

**Localities:** Linji (upper Lichenya) Plateau, at the Linji Falls, *Chapman JD & Chapman EG 7236* (K, MO).

*Crotalaria goetzei* Harms

Shrub, prostrate or upright, up to 3 m high. Leaves trifoliate, glabrous above, pubescent below. Flowers yellow, sometimes flushed purple. Pods sub-cylindrical, densely hairy.

**Flowering:** February-May. **Habitat:** Shrubberies at forest edge and in upland grassland. **Altitude:** 1800-2100 m. **Distribution:** Tanzania, Zambia, Malawi and Mozambique. **Localities:** Chambe Basin, *Chapman JD 5633* (FHO). Thuchila Shelf, near forestry hut, *Chapman JD & Chapman EG 7789* (FHO). Linji (upper Lichenya) Plateau, *Chapman JD & Chapman EG 8231* (FHO). Thuchila Shelf, *Chapman JD & Patel IH 5748* (FHO).

*Crotalaria hyssopifolia* Klotzsch

Annual herb, up to 15 cm high. Leaves trifoliate, oblanceolate. Flowers pale yellow. Pods subglobose-ovoid.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Locally common. **Distribution:** Nigeria and Senegal to Ethiopia and Sudan, southwards to Zimbabwe and Mozambique.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9023* (FHO).

*Dalbergia arbutifolia* Baker ssp. *arbutifolia*

Woody climber, massive-stemmed and much-branched. Leaflets oblong-obovate with incurved



margins. Flowers white or cream. Pods elliptic-oblong, hairy.

**Habitat:** *Brachystegia* woodland and mixed evergreen forest. **Altitude:** 600-850 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** Low down the Likabula Valley, *Chapman JD & Chapman EG 8946* (FHO, K, MO). Lichenya F.R. near Mabuka Court, *Müller T 1572* (K).

*Dalbergia boehmii* Taub.

Small, briefly-deciduous tree, up to 14 m high. Bark light brown, flaking in older trees. Flowers white or cream, fragrant. Pods reddish-brown, oblong, flat.

**Flowering:** September-October. **Habitat:** *Brachystegia* woodland. **Altitude:** 600-1100 m. **Occurrence:** Fairly common but sporadic. **Distribution:** Cameroon and Guinea to Sudan and E. D.R. Congo, south to Mozambique and Zimbabwe. **Localities:** Thuchila River, *Chapman JD 410* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8397 & 9408* (FHO). Fort Lister Gap, close to the old fort, *Chapman JD & Chapman EG 8602* (FHO). Above Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8859* (K, MO). Mchese Mt., Nabwato valley, *Chapman JD & Chapman EG 9126* (K, MO). Likabula Valley, *Chapman JD & Chapman EG 9350* (K, MO).

*Dalbergia fischeri* Taub.

Canopy liane. Leaflets oblong, emarginate at apex. Flowers white to cream, fragrant. Pods pale brown, elliptic-oblong, pointed at apex.

**Fruiting:** May. **Habitat:** Riparian forest. **Altitude:** c. 800 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** Junction of the Namajani Stream with the Phalombe River, Fort Lister Gap, *Chapman JD 574* (FHO). Mchese Mt., Migoyi Stream, *Chapman JD 574b* (FHO). Likabula Valley, near forestry depot, *Chapman JD & Chapman EG 7166* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8642* (FHO).

*Dalbergia lactea* Vatke

Spreading shrub or small tree, up to 4 m high. Leaflets oblong to rounded. Flowers purple with white centres, tightly clustered. Pods oblong, abruptly narrowing at apex, greenish-purple turning pale brown.

**Flowering:** September. **Habitat:** Among rocks beside rivers. **Altitude:** c. 650 m. **Distribution:** Widespread in tropical Africa. **Localities:** Thuchila River, *Chapman JD 431* (FHO). Malawi Tea Factory House, *Chapman JD & Chapman EG 8002* (K, MO). Mchese Mt., low down the western slopes at Namajani Stream, *Chapman JD & Chapman EG 8749* (FHO).

*Dalbergia melanoxydon* Guill. & Perr.

Small, spiny tree, up to about 9 m high, often several stemmed. Bark scaling raggedly in strips.

Heartwood purple to black. Flowers white, fragrant. Pods irregularly oblong, flat.

**Flowering:** November. **Fruiting:** May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Sparse to abundant. **Distribution:** Widespread in tropical Africa and into South Africa (Transvaal). **Localities:** Fort Lister Gap, *Chapman JD 576* (FHO). Low down Likabula Valley, *Chapman JD & Chapman EG 8928* (K, MO).

*Dalbergia nitidula* Welw. ex Baker

Shrub or small tree up to about 10 m high. Leaflets broadly oblong, 4-7 pairs. Flowers white, fragrant. Pods elliptic-oblong.

**Flowering:** August. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1050 m. **Occurrence:** Common all along the lower western and northern slopes of the massif. **Distribution:** D.R. Congo, Uganda, Tanzania, Rwanda, Burundi, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Angola. **Localities:** From Likabula to Thuchila, *Chapman JD 411* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8034 & 9195* (K, MO).

*Dalbergiella nyasae* Baker f.

Small tree up to about 9 m high. Bark deeply fissured. Slash pink, exuding reddish gum. Flowers creamy-white to pinkish-purple in dense terminal sprays. Pods oblong, narrowing at either end, with a marginal fringe of long hairs along the upper edge.

**Flowering:** September. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe. **Localities:** Foot of Mchese Mt., Nkhulambe area, S.E. corner above Misomali, *Chapman JD & Chapman EG 8840* (K, MO).

*Desmodium adscendens* (Sw.) DC.

var. *robustum* B.G.Schub.  
Creeping herb forming mats. Leaves trifoliate, glabrous above. Flowers pink. Pods straight on upper suture, constricted half their width between seeds from the lower suture, pubescent. **Habitat:** Disturbed land and forest. **Distribution:** Widespread in tropical Africa. **Localities:** Swazi, *Faulkner H 392* (K). Mimosa, *Jackson G 590* (K).

*Desmodium barbatum* (L.) Benth.

var. *dimorphum* (Welw. ex Baker) B.G.Schub.  
Procumbent to erect herb, up to about 40 cm high. Stems conspicuously appressed, white pilose. Leaves mono- or trifoliate. Flowers pink to purple.

**Flowering:** April-June. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1200 m. **Distribution:** Cameroon, Nigeria,



D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa and Madagascar.

**Localities:** Likabula Gorge, *Brass LJ 16367* (K). Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9874* (K).

***Desmodium repandum* (Vahl) DC.**

Herb, up to 2 m high. Soft, 3-foliolate leaves. Flowers pink to brick red in lax inflorescences. Pods with upper suture straight or concave, lower suture deeply indented between the seeds.

**Habitat:** Forest. **Altitude:** 850-1550 m. **Distribution:** Tropical and sub-tropical Africa.

**Localities:** Mchese Mt., Namiziwa Valley, *Chapman JD H/660* (K). Upper Ruw River, *Vernay AS 16658* (K).

***Desmodium salicifolium* (Poir.) DC.**

Perennial herb or shrub, up to 1.5 m high. Stems reddish or pale brown. Trifoliolate leaves. Flowers pinkish-green, small. Pods almost sessile, upper suture straight, lower suture slightly indented.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1100 m. **Occurrence:** Common. **Distribution:** Tropical Africa and South Africa.

**Localities:** Likabula Valley, *Chapman JD 544* (K)

***Desmodium setigerum* (E.Mey.) Benth.**

Perennial herb with procumbent stems rooting at the nodes. Flowers white, yellow or mauve. Pods almost sessile, lower suture deeply indented between the seeds.

**Habitat:** *Brachystegia* woodland, on stream bank. **Altitude:** c. 1200 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9875* (K).

***Desmodium uncinatum* (Jacq.) DC.**

Scrambling, viscid herb, up to 2 m high, arising from a stout rootstock. Flowers pale mauve in lax, terminal inflorescence. Pods pale green.

**Flowering:** March-May. **Fruiting:** May. **Habitat:** Open *Brachystegia* woodland or transition woodland. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa; recorded from Cameroon, Ethiopia, Kenya, Zimbabwe, Malawi. **Comments:** A native of South America, introduced as a cultivated plant but frequently found as a naturalised escape.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9507* (K). Lichenya path, Likabula Valley, *Radcliffe-Smith A et al. 5842* (K).

***Dolichos kilimandscharicus* Taub.**

ssp. *kilimandscharicus* var. *kilimandscharicus*

Erect perennial herb, up to 1.5 m high, arising from a massive rootstock. Leaflets 3, densely

pubescent to silvery-velvety especially below. Flowers purple. Pods linear-oblong, densely hairy.

**Flowering:** November. **Habitat:** Light woodland, wooded grassland, fire traces. **Altitude:** c. 950 m. **Distribution:** Ethiopia, Sudan, Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola. **Comments:** A characteristic plant at the early rains.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9425* (FHO).

***Dolichos sericeus* (E.Mey.) ssp. *sericeus***

Twining herb, up to about 2 m long. Slender stems and trifoliolate, ovate leaflets covered with appressed hairs. Flowers purple. Pods slightly curved, glabrous when mature.

**Flowering:** July. **Fruiting:** July. **Habitat:** Amongst bracken and shrubs. **Altitude:** c. 1600 m. **Distribution:** Widespread in the highlands of tropical Africa from Cameroon to southern Ethiopia and south to South Africa (KwaZulu-Natal).

**Localities:** Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9227* (FHO).

***Dumasia villosa* DC. var. *villosa***

Climbing perennial herb, up to about 3 m long. Stems slender and covered with spreading, ferruginous hairs. Flowers yellow. Pods linear, densely hairy with a yellow-brown pubescence.

**Flowering:** June. **Habitat:** Forest edge. **Distribution:** Ethiopia, D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa and Madagascar.

**Localities:** Chambe Basin, *Richards HM 16680* (K).

***Eriosema ellipticum* Welw. ex Baker**

ssp. *ellipticum*

Shrub, up to 2.5 m high. Leaves usually 1-foliolate, silvery-grey beneath. Flowers yellow, in terminal inflorescences. Pods elliptic, covered with velvety hairs.

**Flowering:** September. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1250 m. **Occurrence:** Common and gregarious. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Chiphalombe Shelf, *Chapman JD & Chapman EG 8057* (FHO). Limbuli, *Chapman JD & Chapman EG 9277* (FHO).

***Eriosema lebrunii* Staner & De Craene**

Decumbent, perennial herb. Stems with a white pubescence. Flowers greenish-yellow. Pods oblong, covered with long hairs.

**Flowering:** January. **Habitat:** On bare ground. **Distribution:** Nigeria, Cameroon, D.R. Congo, Burundi, S. Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Chambe Basin, *Hilliard OM & Burt BL 4614* (K).



***Eriosema montanum* Baker f.**

Perennial herb, up to 1.5 m high. Leaflets 3, ovate. Flowers yellow veined with reddish-brown, in well-spaced inflorescences. Pods covered with long hairs.

**Habitat:** Forest edges, grassland, shrubberies. **Distribution:** Cameroon and Nigeria to Ethiopia, East Africa, D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Mulanje, *Whyte A s.n.* (K).

***Eriosema nutans* Schinz**

Perennial herb, up to 1.5 m high. Leaflets 3, long-pilose when young becoming shortly pilose. Flowers yellow. Pods covered with long hairs.

**Habitat:** *Brachystegia* woodland on stream banks. **Altitude:** c. 1400 m. **Distribution:** Ethiopia and Sudan extending to Mozambique, Zimbabwe, South Africa (Transvaal) and Swaziland.

**Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9907* (K).

***Eriosema pauciflorum* Klotzsch**

Prostrate herb. Leaves softly pubescent on both surfaces. Flowers yellow; standard petal sparsely hairy. Pods elliptic, hairy.

**Distribution:** From Ghana, Central African Republic, Sudan, Rwanda, Burundi south to Botswana, Angola and South Africa. **Comments:** On Mt. Mulanje, only known from old collections with no locality and habitat details.

**Localities:** Mt. Mulanje, *Whyte s.n.* (K).

***Eriosema psoraleoides* G.Don**

Shrub, up to about 3 m high. Leaflets 3, velvety, especially on the lower surface. Flowers golden-yellow. Pods suborbicular or oval, hairy.

**Flowering:** April. **Habitat:** Semi-closed woodland. **Altitude:** c. 1000 m. **Distribution:** Fairly widespread in tropical Africa, South Africa (Transvaal, KwaZulu-Natal) and Angola.

**Localities:** Likabula Valley, Nasato Stream, *Chapman JD & Chapman EG 7384* (K, MO).

***Eriosema rhodesicum* R.E.Fr. var. *rhodesicum***

Pyrophytic herb growing from a woody root-stock, up to about 5-10 cm high. Flowers pale creamy-yellow, in axillary inflorescences, appearing before the leaves. Pods elliptic-oblong, hairy.

**Flowering:** September-October. **Habitat:** Seasonally burnt, upland grassland. **Altitude:** c. 2100 m. **Occurrence:** Uncommon. **Distribution:** Cameroon, Nigeria; S. Ethiopia to Mozambique, Zimbabwe and Angola.

**Localities:** Below Namisili peak, near the path from Sombani Hut to Chinzama Hut, *Strugnell AM et al. 71* (FHO, K).

***Erythrina abyssinica* DC.**

Small tree, up to 5 m high. Bark thick and corky, armed with woody bosses. Flowers red, in dense, pyramidal inflorescences, appearing before the leaves.

**Flowering:** November. **Habitat:** *Brachystegia* woodland, close to the river. **Altitude:** c. 860 m. **Occurrence:** Rare. **Distribution:** Ethiopia, Sudan, D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8954* (FHO).

***Erythrina lysistemon* Hutch.**

Tree, up to about 20 m high. Flowers red. Pods dark blackish-brown, constricted between the seeds to form elliptical compartments. Seeds reddish-orange.

**Flowering:** September. **Fruiting:** November. **Habitat:** *Brachystegia* woodland, forest edges, often near streams. **Altitude:** 850-1150 m. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe, Botswana, Swaziland and South Africa.

**Localities:** Just across the boundary from Chitakali, *Chapman JD & Chapman EG 6811* (FHO). Likabula Valley, Mwinere Stream, Chapaluka track, *Chapman JD & Chapman EG 7086* (FHO). Above Limbuli, *Chapman JD & Chapman EG 9274* (FHO).

***Flemingia grahamiana* Wight & Arn.**

Herb or shrub, up to about 1.8 m high. Leaflets velvety-hairy, paler beneath. Flowers yellowish-green. Pods, up to 12 mm long and 6 mm wide, yellowish-pubescent. Seeds black.

**Flowering:** August. **Habitat:** Forest edge, near rivers. **Altitude:** c. 1250 m. **Distribution:** Widespread in tropical Africa, extending into South Africa (Transvaal and KwaZulu-Natal).

**Localities:** Phalombe River, at the entrance to the gorge, *Chapman JD & Chapman EG 7881* (FHO).

***Indigofera atriceps* Hook.f.**

Herb or shrub, up to 2 m high.

**Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Comments:** Appears to be intermediate between ssp. *setosissima* and ssp. *glandulosissima*. **Localities:** Fort Lister Gap, foot of Mchese Mt., *Brummitt RK & Banda EA 9878* (K).

***Indigofera dendroides* Jacq.**

Herb or sub-shrub, up to 1.25 m high. Leaflets 11-27. Flowers salmon-pink. Pedicel c. 2mm long.

**Flowering:** April. **Habitat:** Along paths in upper levels of *Brachystegia* woodland. **Altitude:** c. 1600 m. **Occurrence:** Common. **Distribution:** Senegal to Sudan, extending south to Zimbabwe and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9057* (FHO).



*Indigofera emarginella* Steud. ex A.Rich.

Sub-shrub, up to 1 m high. Stems ribbed. Leaflets 7-11. Standard petal often persists until the fruit is ripe. Pods straight, sub-cylindric.

**Fruiting:** March-June. **Habitat:** *Brachystegia* woodland, beside roadsides or among rocks. **Altitude:** 1000-1300 m. **Occurrence:** Locally common. **Distribution:** N. Nigeria, Central African Republic, Ethiopia, Sudan, D.R. Congo, Rwanda, Burundi, East Africa, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Mchese Mt., western slopes opposite Phalombe Gorge, *Chapman JD & Chapman EG 8574* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9020* (FHO).

*Indigofera fulvopilosa* Brenan

Prostrate herb. The whole plant covered in spreading, brownish hairs, except the leaves which have white hairs. Leaves trifoliolate. Flowers bright pinkish-red. Pods tetragonal to subcylindric.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Distribution:** Sierra Leone to Sudan and the D.R. Congo, southwards to Mozambique, Zimbabwe and Angola.

**Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9876* (K).

*Indigofera lyallii* Baker ssp. *nyassica* J.B.Gillett  
Shrub or small tree, up to 6 m high. Flowers red.

**Flowering:** October-May. **Fruiting:** December-May. **Habitat:** In shrubberies among rocks on grassy hillsides or along forest edges. **Altitude:** 900-2300 m. **Distribution:** S. Malawi (Mt. Mulanje only), Mozambique (Zambézia, Manica and Sofala), E. Zimbabwe.

**Localities:** Path from Thuchila Hut to head of the Ruvo Basin, *Brummitt RK 9662* (K). Foot of Little Ruvo path, above Lujeri, *Brummitt RK 12348* (K). Chambe Peak, *Chapman JD 5619* (FHO). Likabula Valley, on the Lichenya path, *Chapman JD & Chapman EG 6996* (FHO). Likabula Valley, at the source of the Nasato Stream, at the foot of the Cilemba Cliffs, *Chapman JD & Chapman EG 7375* (FHO). Thuchila Shelf, near Chisepo, *Chapman JD & Chapman EG 7621* (FHO). Big Ruvo Valley, *Chapman JD & Chapman EG 9391* (FHO). Lower slopes above Lujeri, on the Madzeka path, *Chapman JD & Patel IH 5727* (K).

*Indigofera mimosoides* Baker

Woody herb, annual or perennial, up to about 1 m high. Leaflets 3-11, elliptic-lanceolate, soft-textured. Spreading, reddish hairs on stems. Flowers tiny, reddish-pink.

**Flowering:** March-June. **Habitat:** Upland grassland on damp banks and path-sides. **Altitude:** 1350-1550 m. **Occurrence:** Locally common. **Distribution:** Angola, Cameroon, and from Ethiopia to Mozambique.

**Localities:** Likabula to Chambe path, *Chapman JD 541* (K). Chambe path, *Richards HM 16706A* (K).

*Indigofera paniculata* Vahl ex Pers.

Erect, rather spindley annual herb, up to 2 m high. Leaves simple, linear-lanceolate. Flowers

in a much-branched panicle. Pods erect, 5 mm long × 2 mm wide, stiffly hairy.

**Fruiting:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Sporadic. **Distribution:** Tanzania, Malawi, Mozambique and Zimbabwe. **Comments:** Probably ssp. *gazensis*.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 7467* (FHO).

*Indigofera rhynchocarpa* Welw. ex Baker  
var. *rhynchocarpa*

Deciduous shrub, up to about 2 m high. Leaflets 5-7, glabrous above. Pods brown, thickened and upturned at the apex.

**Fruiting:** Seeds dispersed by June. **Habitat:** *Brachystegia* woodland, fringing forest. **Altitude:** c. 1000 m. **Distribution:** Central African Republic, D.R. Congo, Rwanda, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likulezi River Gorge, *Chapman JD & Chapman EG 7684* (FHO).

*Indigofera swaziensis* Bolus

var. *perplexa* (N.E.Br.) J.B.Gillett

Shrub, up to 1.5 m high. Leaflets usually 17-19. Flowers small in slender racemes. Hairs on the pod mainly white.

**Habitat:** *Brachystegia* woodland. **Altitude:** c. 1100 m. **Occurrence:** Common. **Distribution:** Kenya, Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Likabula Valley, *Chapman JD 545* (K).

*Kotschy scaberrima* (Taub.) Wild

Shrub, up to 4 m high. Flowers yellow.

**Flowering:** May-June. **Habitat:** Rocky slopes in upland grassland, forest regrowths and thickets. **Altitude:** 1850-2200 m. **Occurrence:** Common, locally abundant. **Distribution:** S. Malawi and Mozambique.

**Localities:** Lichenya Plateau, *Brass LJ 16470* (K). Top of path to Sombani Basin from Fort Lister Gap, *Brummitt RK 11304* (K). Madzeka Basin, just above the Little Ruvo hut, *Brummitt RK 12277* (K). Mchese Mt., above the Fort Lister Gap, *Chapman JD H/739* (K). Chambe Peak, *Chapman JD 5626* (K). Chambe Plateau, *Salubeni AJ 1586* (K).

*Lablab purpureus* (L.) Sweet

ssp. *uncinatus* Verdc.

Herbaceous climber, up to 2 m. Flowers mainly purple. Pods linear-oblong, up to 4 cm long and 1.5 cm wide.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Distribution:** Throughout tropical Africa and South Africa to E. Cape Province.

**Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9897* (K).

*Lotus mlanjeanus* J.B.Gillett

Straggling or procumbent herb covering patches up to 50 cm in diameter. Sparsely pubescent.



Stems reddish. Leaflets with recurved margins. Flowers white with orange or chocolate-brown markings. Calyx glabrous.

**Flowering:** May-November. **Habitat:** Montane grassland. **Altitude:** 1800-2100 m. **Occurrence:** Fairly common. **Distribution:** Endemic to Mt. Mulanje. **Comments:** Brenan (1953) placed all the Mt. Mulanje specimens under *Lotus discolor* E. Mey., but Gillett (1958) and E.S. Martins (*Flora Zambesiaca* 7(3), 2003) adopt a narrower specific concept of the *L. discolor* complex (which is endemic to the African mountains) and recognise more specific boundaries, which are principally based on vegetative characters. *L. mlanjeanus* is the only *Lotus* species on Mt. Mulanje.

**Localities:** Lichenya Hut, *Chapman JD 5612* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8284* (K, MO). Headwaters of the Mulosa River, between Madzeka and Nayawani Shelf, *Chapman JD & Chapman EG 8807* (FHO).

*Macrotyloma axillare* (E.Mey.) Verdc.

var. *glabrum* (E.Mey.) Verdc.

Scrambling herb or herbaceous climber, reaching up to 20 m high. Stems very sparsely hairy, leaves glabrous. Flowers pale yellowish-green. Pods pale yellowish-brown, glabrous, apical beak up to 1.5 cm long.

**Flowering:** June-September. **Fruiting:** June-September. **Habitat:** Riverine transition woodland and evergreen forest. **Altitude:** 850-1100 m. **Distribution:** Widespread in Africa as far south as South Africa (KwaZulu-Natal), west to Senegal and north to Yemen.

**Localities:** Sombani path, above Fort Lister, *Chapman JD & Chapman EG 7747* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9257* (FHO).

*Millettia lasiantha* Dunn

Woody climber, reaching 30 m high into the canopy. Flowers mauve, petals brown-silky outside. Pods densely brown-hairy, apical beak sharply down-turned.

**Flowering:** October. **Fruiting:** April, September. **Habitat:** Riverine forest, especially on the river banks. **Altitude:** 800-1400 m. **Occurrence:** Common. **Distribution:** Kenya to Malawi and Mozambique.

**Localities:** Likulezi River Valley, *Chapman JD 472* (FHO). Mulosa (Crater) Gorge, *Chapman JD & Chapman EG 6532* (FHO). Above Esperanza, *Chapman JD & Chapman EG 6661* (FHO). Likulezi River, near Likulezi Farm, *Chapman JD & Chapman EG 7432* (FHO). Mchese Mt., Nthambi Gorge above Misomali Village, *Chapman JD & Chapman EG 8849* (FHO).

*Mucuna coriacea* Baker

ssp. *irritans* (Burt Davy) Verdc.

Herbaceous climber. Leaves hairy but often appearing glabrous to the naked eye. Flowers purple. Pods oblong, curved, densely covered with brown bristles.

**Flowering:** June. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Distribution:** D.R. Congo, Uganda,

Tanzania, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Swaziland.

**Localities:** Foot of Mchese Mt., between Phalombe and Fort Lister, *Chapman JD & Chapman EG 8543* (FHO).

*Mucuna poggei* Taub.

var. *pesa* (De Wild.) Verdc.

Twining climber, up to 5 m high. Leaves densely grey hairy beneath. Flowers whitish-green. Pods densely covered with orange-brown, bristly hairs. **Flowering:** May. **Habitat:** Amongst tall grass and bracken. **Altitude:** c. 1300 m. **Distribution:** D.R. Congo, Uganda, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, along the Lichenya path, *Chapman JD & Chapman EG 8532* (FHO).

*Mundulea sericea* (Willd.) A.Chev.

Small tree, up to about 4 m high. Corky bark. Imparipinnate leaves. Flowers bluish-purple, standard silky outside. Pods indehiscent, densely pubescent.

**Fruiting:** June. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Occurrence:** Sporadic. **Distribution:** Fairly widespread in tropical Africa and into South Africa.

**Localities:** Mchese Mt., Nabwato Valley, *Chapman JD & Chapman EG 9131* (FHO).

*Neonotonia wightii* (Wight & Arn.) Lackey

ssp. *wightii* var. *longicauda* (Schweinf.) Lackey

Twining climber with a very slender, wiry stem, smothering shrubs, up to 2-3 m high. Leaves trifoliate. Flowers very small, white, in erect spikes up to 20 cm long. Calyx and stem covered in brown hairs.

**Flowering:** March. **Habitat:** Transition woodland. **Altitude:** c. 850 m. **Occurrence:** Locally abundant. **Distribution:** Widespread from Ethiopia through the D.R. Congo and East Africa to South Africa, Swaziland and Angola.

**Localities:** Likabula River, *Chapman JD & Chapman EG 9509* (FHO).

*Ormocarpum kirkii* S.Moore

Small tree, up to about 7 m high. Margins of leaflets revolute. Flowers pink or purple. Pods strongly curved, usually only one seed matures.

**Flowering:** May. **Fruiting:** Immature in May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Distribution:** Somalia, E. D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Namibia.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8492* (FHO).

*Pericopsis angolensis* (Baker) van Meeuwen

Tree, up to 17 m high. Most parts of the plant covered in a rusty indumentum. Flowers white to purple with dark veins.



**Flowering:** November onwards. **Habitat:** Deciduous woodland. **Altitude:** c. 900 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola. **Comments:** The wood is very hard. **Localities:** On the Boma Path, above Chitakali, *Chapman JD & Chapman EG 6825* (FHO).

***Philenoptera bussei* (Harms) Schrire**

Syn. *Lonchocarpus bussei* Harms

Deciduous, slender tree, up to 8 m high or more. Small, cream and mauve flowers in lax, pendant inflorescences. Flowering when leafless. Pod elliptic-oblong, pale brown, 1-3 seeded.

**Flowering:** September. **Habitat:** Dry scrub or *Brachystegia* woodland. **Altitude:** c. 750 m. **Occurrence:** Locally common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Mpumalanga Province).

**Localities:** Fort Lister Gap, near the Old Boma, *Chapman JD & Chapman EG 9267* (K).

***Philenoptera ? violacea* (Klotzsch) Schrire**

Syn. *Lonchocarpus capassa* Rolfe; *Lonchocarpus violaceus* (Klotzsch) Oliv.

Tree, up to about 8 m high. Flowers pale mauve, in mainly terminal inflorescences. Pods elliptic-oblong, with a narrow wing along the upper edge.

**Habitat:** Along streams. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Widespread in the drier parts of southern Africa, extending up to Tanzania and the D.R. Congo and down to Swaziland and South Africa (Northern and Mpumalanga Provinces, KwaZulu-Natal).

**Localities:** Mchese Mt., at the foot near Nampende Stream, *Chapman JD & Chapman EG 9162* (FHO).

***Pseudarthria hookeri* Wight & Arn.**

Herb, up to 1.5 m high, with a woody rootstock. Stems and leaflets pubescent to densely velvety. Flowers pink. Pods straight.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Common. **Distribution:** Cameroon, Ethiopia, Sudan, D.R. Congo, Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, N.E. South Africa and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8995* (FHO).

***Pterocarpus angolensis* DC.**

Deciduous tree, up to 12 m high or more. Flowers golden-yellow to orange, produced before or with the young leaves. Pods suborbicular, with a broad, undulate wing; long, rigid bristles over the seed-bearing part of the fruit.

**Flowering:** August-September. **Fruiting:** September. **Habitat:** *Brachystegia* woodland. **Distribution:** Widespread in southern Africa from the D.R. Congo and Tanzania to South Africa (Transvaal), Swaziland, Namibia and Angola. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 8852* (FHO).

***Pterocarpus rotundifolius* (Sond.) Druce**

ssp. *rotundifolius*

Tree, up to 25 m high. Leaflets broad to rounded, emarginate at apex, in 1-3 pairs. Flowers yellow, fragrant. Pods shortly stalked, elliptic-oblong to rounded, almost glabrous, with a narrow wing.

**Flowering:** Beginning November. **Habitat:** Stream-fringing forest or woodland. **Altitude:** c. 850 m. **Distribution:** Southern Africa.

**Localities:** Chitakali, estate boundary, *Chapman JD & Chapman EG 6801* (FHO, K). Top boundary of Chitakali, *Chapman JD & Chapman EG 6832* (FHO).

***Pterocarpus rotundifolius* (Sond.) Druce**

ssp. *polyanthus* (Harms) Verdc.

Tree, up to 25 m high. Leaflets 4-9 jugate, ovate with an acuminate apex. Flowers yellow. Fruits similar to ssp. *rotundifolius*.

**Flowering:** January-February. **Fruiting:** April. **Habitat:** Transition woodland, often bordering streams. **Altitude:** c. 650-900 m. **Occurrence:** Locally common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Botswana.

**Localities:** Likabula, *Chapman JD 516* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8412* (FHO). Mini-Mini, *Chapman JD & Chapman EG 8434* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9488* (FHO).

***Rhynchosia clivorum* S.Moore**

ssp. *pycnantha* (Harms) Verdc.

Shrub, up to 5 m high. Leaflets 3, hairy, conspicuously rugose or bullate. Flowers yellow. Pods oblong, densely covered in yellow, bristly hairs.

**Flowering:** July. **Habitat:** Edge of montane forest. **Altitude:** c. 1950 m. **Occurrence:** Common. **Distribution:** D.R. Congo, S. Tanzania, E. Zambia, Malawi, South Africa (Transvaal) and Swaziland.

**Localities:** Edge of Chiphalombe Shelf, *Chapman JD & Chapman EG 7861* (FHO).

***Rhynchosia goetzei* Harms**

var. *pseudocraiba* Verdc.

Herbaceous twining climber, up to about 2 m. Leaflets 3, glabrescent. Flowers yellow. Pods pale yellow, veined with green.

**Flowering:** March. **Habitat:** Edge of stream-fringing forest. **Altitude:** c. 850 m. **Distribution:** D.R. Congo, Rwanda, Burundi, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8997* (FHO).

***Rhynchosia resinosa* (A.Rich.) Baker**

Slender, twining climber, festooning shrubs, up to 2-3 m high. Leaflets 3, paler beneath, almost rhomboid. Inflorescence sticky. Flowers deep yellow, sweetly aromatic.



**Flowering:** July. **Habitat:** Edge of stream-fringing bush in miombo woodland. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa, extending into South Africa (Transvaal) and Angola.  
**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9194* (FHO).

*Sesbania macrantha* Welw. ex Phill. & Hutch.  
var. *macrantha*

Tree, up to 7 m high. Glabrous apart from the calyx margin. Flowers golden-yellow. Pods curved, up to 30 cm long.

**Flowering:** April. **Fruiting:** April-July. **Habitat:** Transition woodland or close to rocky streams. **Altitude:** c. 1000-1100 m. **Distribution:** West Africa, East Africa to South Africa (Transvaal) and Angola.  
**Localities:** *Chapman JD & Chapman EG 7497* (FHO). Mchese Mt., along the Namajani Stream, *Chapman JD & Chapman EG 8658* (FHO).

*Tephrosia aequilata* Baker

ssp. *mlanjeana* Brummitt

Spreading shrub, up to 3 m high. Leaves covered with appressed hairs, lower surface silvery. Leaflets oblong, rounded at apex. Stipules and bracts persistent. Flowers purple in dense, terminal clusters. Pods ascending, white or fulvous tomentose.

**Flowering:** April-September, December. **Fruiting:** Beginning May. **Habitat:** Montane grassland, forest edge, shrubberies. **Altitude:** 1250-2150 m. **Occurrence:** Common. **Distribution:** S. Malawi only, mainly Mt. Mulanje but probably also from Chiradzulu Mt. and near Blantyre.  
**Localities:** Below Thuchila Hut, *Brummitt RK 9616* (K). Chiphalombe Shelf, *Chapman JD 569* (FHO). Boma Path to Lichenya Plateau, *Chapman JD & Chapman EG 6916* (FHO). Chambe West Face Shelf approach, *Chapman JD & Chapman EG 7666* (FHO). Western slopes of Mchese Mt., in the Chandamwani Stream gorge, *Chapman JD & Chapman EG 8582* (FHO). Madzeka Basin, close to the forestry hut, on path from Sombani, *Chapman JD & Patel IH 5711* (K). Lichenya Plateau, *Pawek J 3810* (K).

*Tephrosia bracteolata* Guill. & Perr.  
var. *bracteolata*

Annual shrub or herb, up to 2 m high. Leaflets glabrous above, appressed silky-pilose below. Flowers purple. Pods greenish-brown with short, stiff hairs.

**Flowering:** March. **Habitat:** Transition woodland at stream edge. **Altitude:** c. 850 m. **Distribution:** West Africa, East Africa, Malawi and Angola.  
**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9001* (FHO).

*Tephrosia decora* Welw. ex Baker

Decumbent herb, up to 70 cm high. Under surface of the leaves silvery-grey. Flowers pink

in lax inflorescences. Pods brown pubescent, more densely so at the margins.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Distribution:** S. D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe, Angola.  
**Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK 9886* (K).

*Tephrosia elata* Deflers

ssp. *heckmanniana* (Harms) Brummitt

Annual or short-lived perennial herb or shrub, up to 1.5 m high. Leaflets glabrous, yellow-green to slightly glaucous. Flowers purple. Pods yellowish sparsely covered with short hairs.

**Flowering:** March-April. **Fruiting:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** 1000-2500 m. **Distribution:** S.E. D.R. Congo, S.W. Tanzania, Zambia, Malawi, N. Mozambique, Zimbabwe and Angola.  
**Localities:** On Thuchila 'sky-line' path, *Brummitt RK 9789* (K). Mulanje, *Chapman JD 540* (FHO). Likabula Valley, *Chapman JD & Chapman EG 7314* (FHO). Likabula Stream, by Likabula House, *Lawrence G 280* (K).

*Tephrosia stormsii* De Wild. var. *stormsii*

Short-lived shrub, up to about 1.5 m high. Leaflets glabrous above, shortly and appressed pubescent below, not more than 6 mm wide. Flowers purple. Pods, up to 7 cm long, containing up to 16 seeds.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** D.R. Congo, Rwanda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.  
**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8999* (FHO).

*Tephrosia whyteana* Baker f. ssp. *whyteana*

Shrub, up to 4 m high. Leaflets seem to be longer and less oblong-shaped than those of *T. aequilata*. Stipules and bracts quickly caducous. Flowers purple, in fairly lax inflorescences. Pods longer (4-6 cm) than those of *T. aequilata*, covered in dense, spreading brown hairs.

**Flowering:** May-September. **Fruiting:** September. **Habitat:** Shrub covered slopes in montane grassland, forest edges. **Altitude:** 1350-2000 m. **Occurrence:** Occasional. **Distribution:** Endemic to Mt. Mulanje.  
**Localities:** Little Ruo path, level with top of waterfall, *Brummitt RK 12341* (K). Mulanje, *Burt Davy J 21983* (FHO). Lichenya Plateau, 1/2 mile from Lichenya hut along the Boma Path, *Chapman JD 5595* (K).

*Vigna comosa* Baker ssp. *comosa*

Trailing herb. Leaflets up to 3.5 cm long × 2 cm wide. Flowers orange.

**Flowering:** June. **Habitat:** In gritty soil. **Distribution:** From Zambia, Malawi and Mozambique north to Cameroon, Central African Republic and Uganda.  
**Localities:** Lichenya Plateau, *Richards HM 16549* (K).



*Vigna frutescens* A.Rich.

ssp. *frutescens* var. *buchneri* (Harms) Verdc.

Suffrutex flowering at ground level. Flowers mauve, with yellow and purple towards the base, scented. Stems, calyx and Pods practically glabrous.

**Flowering:** August. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Distribution:** D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Botswana and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9264* (FHO).

*Vigna gazensis* Baker f.

Herbaceous climber. Stems and leaves covered in long hairs, white on the stems, orange-brown on the leaves especially on the veins. Leaves trifoliate. Flowers purple in compact inflorescences.

**Flowering:** August. **Habitat:** On rocky slopes in grassland among shrubs. **Altitude:** 1450-1700 m. **Distribution:** Mt. Mulanje in Malawi, Chimanimani Mts. in Zimbabwe and Mozambique, Angola and Madagascar.

**Localities:** Nayawani Shelf, *Chapman JD & Chapman EG 8805* (FHO). Muluzi Valley, Chisongeli Forest, *Chapman JD & Chapman EG 9287* (FHO). Likabula Valley, Lichenya path, *Strugnell AM & Salubeni AJ 7* (FHO).

*Xeroderris stuhlmannii* (Taub.) Mendonça & Sousa

Syn. *Ostryoderris stuhlmannii* Taub.

Tree, up to about 20 m high with a rounded crown. Bark grey-brown, flaking. Leaflets oblong-lanceolate to oblong-ovate. Flowers greenish-white. Pods linear-oblong, flattened with a wing on each side.

**Fructing:** March-May. **Habitat:** Rocky hillsides. **Altitude:** 750-900 m. **Distribution:** The savannah zone of West Africa and the drier parts of southern Africa as far as South Africa (Transvaal) and Swaziland.

**Localities:** Naitete Stream, where the forest boundary crosses it between Nolo and Malere villages, *Chapman JD 386* (FHO). Chikomwe Hill, Likulezi, *Chapman JD & Chapman EG 7543* (FHO). Mini-Mini, *Chapman JD & Chapman EG 8404* (FHO). Near the Likabula timber depot, *Clements JB 56* (FHO).

## FLACOURTIACEAE

Refs. Dowsett-Lemaire & White, 1990 a; Sleumer, 1975.

*Aphloia theiformis* (Vahl) Benn.

Tree, up to 10 m high. Branchlets reddish-brown, striated. Leaves elliptic with serrated margins. Flowers creamy-green, usually solitary in the leaf axils. Fruits white.

**Flowering:** August-December. **Fructing:** December onwards. **Habitat:** In or at the edge of forest. **Altitude:** 1350-

2000 m. **Occurrence:** Common. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Mulanje Mt., *Chapman JD 303* (FHO). Lichenya Plateau, *Chapman JD 5858* (FHO). Lichenya Plateau, C.C.A.P. cottage, *Chapman JD & Chapman EG 6973* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 7907* (FHO). Just below the Chiphalombe Shelf, *Chapman JD & Chapman EG 8089* (FHO). Head of Nandiwo Stream, below Litakala Peak, *Chapman JD & Chapman EG 8596* (FHO). Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG 8881* (FHO).

*Dovyalis macrocalyx* (Oliv.) Warb.

Spiny shrub or small tree, up to 13 m high. Leaves broadly elliptic, papery. Fructing calyx enlarged, margins glandular-ciliate. Fruit ovoid, fleshy, red.

**Flowering:** November. **Fructing:** November-December. **Habitat:** Understorey of riparian forest. **Altitude:** 800-1800 m. **Distribution:** Central African Republic, Sudan, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Mulosa Gorge (to the Crater), *Chapman JD 6565* (FHO). Pamba Stream, above Esperanza, *Chapman JD & Chapman EG 6710* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6852* (FHO). Linji Stream, *Chapman JD & Chapman EG 7045* (FHO). West bank of Phalombe River, *Chapman JD & Chapman EG 7810* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 7889* (FHO). Mchese Mt., northern foot, along the Nandiwo Stream, *Chapman JD & Chapman EG 8625* (FHO). Mchese Mt., western slopes, Namajani Stream, *Chapman JD & Chapman EG 8736* (FHO). Mchese Mt., Nthambi Gorge, above Misomali, *Chapman JD & Chapman EG 8829* (FHO). Chisongoli Forest, Muluzi catchment, *Chapman JD & Chapman EG 9435* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9438* (FHO).

*Flacourtia indica* (Burm.f.) Merr.

Spiny, shrub or small tree, up to 8 m high. Forking low down, with spreading, drooping branches. Leaves ovate-elliptic, glabrous to hairy. Fruits fleshy, red.

**Fructing:** December-March. **Habitat:** Woodland. **Altitude:** c. 650 m. **Occurrence:** Common all along the lower slopes. **Distribution:** Widespread in eastern and central Africa; South Africa (Transvaal).

**Localities:** Lower slopes between Likabula and Phalombe, *Chapman JD 505* (FHO). Thuchila & Nandiwo Streams, *Chapman JD 513* (FHO). Eldorado, 'Gardens Jungle', along the Thornwood boundary, *Chapman JD & Chapman EG 8416* (FHO).

*Gerrardina eylesiana* Milne-Redh.

Arching, scrambling shrub or small tree, up to 10 m high. Leaves broadly ovate with a long, tapering apex. Flowers small, white. Fruits greenish-white, ripening purple.

**Flowering:** August, December. **Fructing:** August. **Habitat:** Forest edges; shrubby, rocky hillsides. **Altitude:** 1700-



2150 m. **Occurrence:** Sporadic. **Distribution:** Usambara and Uluguru Mts. in Tanzania; Mt. Mulanje in Malawi; Chimanimani Mts. in Zimbabwe.

**Localities:** Big Ruo Valley, *Chapman JD 424* (FHO). Lichenya Plateau, C.C.A.P. cottage, *Chapman JD & Chapman EG 6974* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7972* (FHO). Headwaters of the Mulosa River, *Chapman JD & Chapman EG 8796* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9242* (FHO). Sombani, *Chapman JD & Patel IH 5745* (FHO).

### *Homalium africanum* (Hook.f.) Benth.

Tree, up to 15 m high. Leaves elliptic to oblong, glabrous. Inflorescence terminal, flowers dull yellow. Petals broadly spatulate, longer than the sepals.

**Flowering:** September-October. **Habitat:** Evergreen, stream-fringing forest and riverine *Brachystegia* woodland. **Altitude:** 550-850 m. **Occurrence:** Locally common. **Distribution:** West Africa, D.R. Congo, East Africa, Zambia, Malawi (Mt. Mulanje), Mozambique and Angola.

**Localities:** Entrance to the Lauderdale Crater, *Chapman JD 6487* (FHO). Mulosa Stream, Boma Water intake, *Chapman JD 6544* (FHO). Lichenya F.R., Milonde Court, T.N.Mabukas, *Chapman JD 6618* (FHO). Nakolu Stream above Lauderdale, *Chapman JD & Chapman EG 6717 & 6730* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8467* (FHO).

### *Homalium dentatum* (Harv.) Warb.

Tree, up to 27 m high. Leaves glabrous, rounded to ovate. Inflorescences axillary. Flowers yellowish-green, petals about same length as the sepals.

**Flowering:** April. **Habitat:** *Brachystegia* woodland, wooded grassland. **Altitude:** 950-1200 m. **Distribution:** Zambia to South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Chiphalombe Stream, *Chapman JD 547 & 8051* (FHO). Likabula Valley, source of Nasato below Cilemba, *Chapman JD & Chapman EG 7404* (FHO). Mchese Mt., Nabwato valley, *Chapman JD & Chapman EG 9130* (FHO). Namitambo valley below the rim of Chambe Basin, *Chapman JD & Chapman EG 9552* (FHO).

### *Kiggelaria africana* L.

Tree, up to 15 m high. Leaves elliptic-lanceolate to oblong, yellow-tomentose on lower surface. Flowers creamy-green. Fruits globose, warty, yellowish-green, dehiscent.

**Flowering:** October-November. **Fruiting:** March-September. **Habitat:** Forest and forest margins. **Altitude:** 1900-2300 m. **Occurrence:** Common. **Distribution:** On the mountains of eastern Africa from Tanzania to Cape Province in South Africa.

**Localities:** Chambe Plateau, *Chapman JD 535* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7010* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8075* (FHO). Likabula to Lichenya path, *Chapman JD & Chapman EG 8172* (FHO). Sombani Plateau, *Chapman JD & Chapman EG 8766* (FHO). Big Ruo Valley, *Chapman JD & Chapman EG 9392* (FHO). Lower slopes of Namisili, *Chapman JD & Patel IH 5766* (FHO).

### *Oncoba spinosa* Forssk.

Spiny shrub or small tree, up to 8 m high. Leaves ovate-elliptic. Fruit globose with a hard shell, dark green or brown.

**Fruiting:** April-June. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** Widespread through tropical Africa and South Africa (Transvaal).

**Localities:** Phalombe River, *Chapman JD 557* (FHO). Between Chiphalombe & Phalombe Streams, *Chapman JD & Chapman EG 7739* (FHO).

### *Rawsonia burtt-davyi* (Edlin) F.White

Syn. *Dasylepis burtt-davyi* Edlin

Forest tree, up to 25 m high. Bark exfoliating in thin, curly, papery scales over the whole trunk. Leaves elliptic-lanceolate, fairly narrow, margin entire. Flowers white. Fruits, globose, up to 2 cm diameter, ripening red.

**Flowering:** September-November. **Fruiting:** November-February. **Habitat:** Mid-altitude and montane forest. **Altitude:** 1000-1950 m. **Occurrence:** A common, mid-canopy species. **Distribution:** Endemic to Mt. Mulanje. **Comments:** *Sleumer* (1975) placed this species in the synonymy of *Rawsonia reticulata* Gilg, which has a more widespread distribution.

**Localities:** Site of old Boma hut, *Chapman JD & Chapman EG 8182* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8208* (FHO). Ruo Gorge, at the dam above the power station, *Chapman JD & Chapman EG 8305* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9348* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9465* (FHO).

### *Rawsonia lucida* Harv. & Sond.

Forest tree, up to 25 m high. Bark flaking sparingly on older trees. Leaves lanceolate-oblong, serrated margin. Flowers whitish-green. Fruits globose, up to 3.5 cm diameter, yellow, fleshy.

**Flowering:** April-November. **Fruiting:** October-March. **Habitat:** Forest. **Altitude:** 550-1700 m. **Occurrence:** Common. **Distribution:** Somalia and Sudan, southwards through East Africa and E. D.R. Congo to the eastern Cape in South Africa. **Comments:** Several trees on Mchese were 20-25 m high. Only one from the main Mulanje massif attained 20 m, most were no taller than 16 m.

**Localities:** Gallery forest above Chiphalombe Stream, *Chapman JD 627* (FHO). Above Esperanza, *Chapman JD & Chapman EG 6693* (FHO). Below Chambe Peak, *Chapman JD & Chapman EG 7053* (FHO). Likabula Valley, source of the Nasato Stream below the Cilemba cliffs, *Chapman JD & Chapman EG 7390* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8547* (FHO). Western slopes of Mchese Mt., *Chapman JD & Chapman EG 8584* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8686* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9149* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9178* (FHO). Chisongeli forest, Muluzi Valley, *Chapman JD & Chapman EG 9283* (FHO).



*Scolopia stoltzii* Gilg

Tree, up to 20 m high, but usually smaller than this. Leaves glabrous, elliptic-oblong or ovate-elliptic. Flowers solitary in leaf axils. Fruit globose, fleshy, ripening red.

**Fruiting:** October-January. **Habitat:** Understorey of forest. **Altitude:** 800-1500 m. **Distribution:** Cameroon, D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Mozambique and South Africa (KwaZulu-Natal).

**Localities:** Above Esperanza, bed of Nakolu Stream, *Chapman JD & Chapman EG 6696* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6751* (FHO). Mulosa Stream above Chisambo, *Chapman JD & Chapman EG 6827* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6906* (FHO). Foot of Chambe Peak, *Chapman JD & Chapman EG 7048* (FHO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 7119* (FHO). Along the Nasato Stream, below Cilemba, *Chapman JD & Chapman EG 7156* (FHO). Below Chambe West Face, *Chapman JD & Chapman EG 7759* (FHO). Along the Nandiwo Stream, Likulezi area, *Chapman JD & Chapman EG 7774* (FHO). Chiphalombe Forest, *Chapman JD & Chapman EG 7988* (FHO). Western slopes of Mchese Mt., Nanthali Stream, *Chapman JD & Chapman EG 8732* (FHO).

GENTIANACEAE

*Exacum zombense* N.E.Br.

Annual herb, up to 20 cm high. Calyx 5-lobed, winged. Petals mauve or pale blue.

**Flowering:** May-July. **Habitat:** Seepage areas over rocks in short grassland, cultivated slopes. **Altitude:** 750-1900 m. **Distribution:** S. Malawi and N. Mozambique.

**Localities:** Above top of Little Ruo waterfall, *Brummitt RK 12326* (K). Bottom of Little Ruo path, *Brummitt RK 12357* (K). Namunyamuni River, on Lichenya path, *Goyder DJ et al. 3196* (K). Mchese Mt., path from Fort Lister Gap, *Iwarsson M & Ryding O 808* (K). Great Ruo Gorge, Lujeri, *Richards HM 770* (K).

*Sebaea grandis* (E.Mey.) Steud.

Erect annual herb, up to 30 cm high. Paired, ovate-lanceolate leaves. Flowers large, creamy-yellow with a green centre, usually solitary and terminal.

**Flowering:** March. **Habitat:** Side of a disused road. **Altitude:** c. 1000 m. **Occurrence:** Very locally common. **Distribution:** Nigeria, Cameroon, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and South Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8994* (FHO).

*Sebaea longicaulis* Schinz

Erect herb, up to 60 cm high but usually smaller than this. Leaves sessile, elliptic-lanceolate to subcircular-cordate. Flowers yellow, in few-flowered, terminal inflorescences.

**Flowering:** March-July. **Habitat:** Along paths in grassland, woodland and cedar forest; in short grassland. **Altitude:** 1900-2300 m. **Occurrence:** Frequent to abundant. **Distribution:** Cameroon, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Path from Thuchila hut to head of Ruo Basin, *Brummitt RK 9634* (K). Thuchila Shelf, *Chapman JD 5677* (FHO). Sombani to Madzeka, *Chapman JD & Chapman EG 8365B* (FHO). Just above Madzeka, on the Sombani path, *Chapman JD & Chapman EG 8372* (MO). Between Madzeka Hut & Manene Peak, on the ridge, *Chapman JD & Patel IH 5773* (K).

*Swertia abyssinica* Hochst.

Branched, annual herb, up to about 15 cm high. Distant, paired leaves. Flowers white or cream.

**Flowering:** February-May. **Habitat:** Seepage rocks among moss or in wet grass. **Altitude:** 1900-2000 m. **Occurrence:** Locally abundant. **Distribution:** Bioko and Cameroon, Ethiopia and Malawi.

**Localities:** Mulanje Mt., *Chapman JD 451* (BM). Linji (Lichenya) plateau, *Chapman JD & Chapman EG 7200* (FHO). Namunyamuni River, Lichenya path, *Goyder DJ et al. 3193* (K).

*Swertia curtioides* Gilg

Erect, annual herb, up to 45 cm high. Upper leaves sessile, folded lengthwise. Flowers white or purplish, with two green glands at base of each corolla lobe.

**Flowering:** February-July. **Habitat:** Wet areas in montane grassland. **Altitude:** c. 2000-2100 m. **Distribution:** Tanzania, Malawi and Mozambique.

**Localities:** Path from Thuchila hut to head of Ruo Basin, *Brummitt RK 9629* (K). Cilemba Peak, Lichenya Plateau, *Richards HM H 16592* (K).

GERANIACEAE

*Geranium arabicum* Forssk.

Perennial herb with stoloniferous, creeping or scrambling stems. Leaf lamina 5-lobed, lobes broadly elliptic to rhombic in outline, deeply serrated. Inflorescence usually 2-flowered, flowers white or pale pink.

**Flowering:** June-September. **Fruiting:** August-September. **Habitat:** Damp, shady locations in woodland or forest. **Altitude:** 2000-2200 m. **Distribution:** Widespread on the mountains of tropical Africa.

**Localities:** Lichenya Plateau, below the Forestry Hut, *Chapman JD & Chapman EG 8042* (K). Chambe Basin Ridge, *Richards HM 16687* (K). On the approach to Chinzama Hut from the Sombani direction, *Strugnell AM et al. 86* (FHO).

*Geranium mlanjense* Laundon

Perennial herb with decumbent stems, up to 40 cm long. Leaf 5-lobed, lobes obovate in



outline and very divided. Inflorescence 1-flowered. Flowers pale pink.

**Flowering:** July-September. **Fruiting:** September onwards. **Habitat:** Amongst rocks in grassland, damp banks in cedar forest. **Altitude:** c. 2100-2200 m. **Occurrence:** Uncommon. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Lichenya Plateau, *Brass LJ 16789* (K). On the approach to Chinzama Hut from the Sombani direction. *Strugnell AM et al. 85* (FHO).

**GESNERIACEAE**  
*Refs. Hilliard & Burt, 1971, 1986.*

*Streptocarpus dolichanthus* Hilliard & B.L.Burt  
Acaulescent herb. Leaves near apex of rhizome, petioles deep red, short silky hairs on upper surface, veins impressed. Flowers blue-mauve inside, paler outside, corolla tube 5 cm long.

**Flowering:** May. **Habitat:** Shady, mossy rocks by or in streams. **Altitude:** c. 1800 m. **Occurrence:** Locally abundant. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Lichenya Plateau, below the waterfall, *Chapman JD & Chapman EG 8496* (FHO).

*Streptocarpus goetzei* Engl.  
Terrestrial herb or epiphyte with single, large, sessile leaf. Thinly pilose on both surfaces. Flowers mid-mauve, with 2 darker patches at sides of mouth.

**Flowering:** December-January. **Habitat:** Shady, mossy banks, rocks and tree trunks in forest. **Altitude:** 800-1900 m. **Distribution:** Tanzania, Malawi and Mozambique. **Localities:** Chitakali Stream, *Chapman JD & Chapman EG 6944* (E). Outer slopes of Mt. Mulanje, at the Nakatete Stream below the Linji cliffs at Glenorchy, *Chapman JD & Chapman EG 7029* (FHO). Linji (upper Lichenya) Plateau, *Chapman JD & Chapman EG 7248* (E). Likulezi Valley, at the Ng'ono waterfall, *Chapman JD & Chapman EG 7532* (E).

*Streptocarpus hirtinervis* C.B.Clarke  
Herb with leaves in a rosette at the end of the rhizome. Leaves silky pilose, margin deeply and coarsely serrate. Flowers mid-mauve, sometimes pink-tinged.

**Flowering:** December-January. **Fruiting:** January. **Habitat:** On rock faces and crevices, cases of sedge tufts. **Altitude:** c. 2100 m. **Distribution:** S. Malawi. **Localities:** Chambe-Thuchila path, *Hilliard OM & Burt BL 4605* (E). Path from Sombani to the Great Ruo Basin, *Hilliard OM & Burt BL 6089* (E).

*Streptocarpus leptopus* Hilliard & B.L.Burt  
Rosette herb. Leaves several, prostrate, shortly stalked. Leaf lamina ridged between veins, dark green above, purplish below, both

surfaces pilose. Flowers white with large purple blotches.

**Flowering:** March. **Habitat:** Shady, moss-covered rocks by streams in forest. **Altitude:** c. 1000-1100 m. **Distribution:** Ruo Gorge, Mt. Mulanje and Serra Tumbine near Milanje, Mozambique. **Localities:** Ruo Gorge, *Hilliard OM & Burt BL 4637* (E). Ruo Gorge, *Johnston-Stewart NGB 348* (E).

*Streptocarpus milanjanus* Hilliard & B.L.Burt  
Rosette herb. Leaves 2-ranked at rhizome apex. Inflorescence-bearing leaves petiolate. Leaves green, shortly pilose. Flowers white, striped purple in the throat of the corolla tube.

**Flowering:** January-May. **Fruiting:** April-May. **Habitat:** Shady, moss-covered rocks in forest. **Altitude:** c. 1800 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Lichenya Plateau, in the Nessa Path forest, *Chapman JD & Chapman EG 8516 & 9067* (FHO).

*Streptocarpus nimbicola* Hilliard & B.L.Burt  
Rosette herb. Leaves oblong, apex withered, densely silky-hairy on both surfaces, ridged between veins, margin deeply and coarsely serrated. Flowers purple with whitish tube.

**Flowering:** December-February. **Habitat:** Wet, moss-covered rock faces, crevices and on bases of tufted sedges. **Altitude:** c. 1150 m. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Little Lichenya River, *Chapman JD & Chapman EG 8344* (FHO).

*Streptocarpus wittei* De Wild.  
Herb with a single, broadly ovate leaf with cordate base. Leaf surface shortly pilose. Corolla tube almost straight. **Habitat:** Among rocky outcrops. **Distribution:** D.R. Congo, Zambia and Malawi. **Comments:** This is the only record from Mt. Mulanje. Plants were grown at Edinburgh Botanic Garden from seed collected by Mrs. H.M. Richards. **Localities:** Lichenya Plateau, *Richards HM 16530* (E).

**HAMAMELIDACEAE**

*Trichocladus ellipticus* Eckl. & Zeyh.  
ssp. *Mulosanus* (Baker) Verdc.  
Small tree, up to about 11m high. Leaves alternate, elliptic or lanceolate, pale beneath due to dense stellate yellow-grey hairs. Petals 5, spatulate with strongly revolute margins.

**Flowering:** June-October. **Habitat:** Riverine forest. **Altitude:** 900-1800 m. **Distribution:** Eastern Africa from Ethiopia and Sudan to the eastern Cape in South Africa. **Localities:** Likulezi Valley, *Chapman JD 461* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7683* (FHO). Likulezi River, below the gorge, *Chapman JD & Chapman EG 7730* (FHO).



## HETEROPYXIDACEAE

### *Heteropyxis natalensis* Harv.

Tree, up to 27 m high. Leaves lanceolate, dotted with oil cavities. Aromatic when crushed. Flowers greenish-cream, small. Capsule, subglobose or ellipsoid, gland-dotted.

**Flowering:** March. **Fruiting:** April-May. **Habitat:** In and edge of riparian forest or *Brachystegia* woodland. **Altitude:** 650-1200 m. **Occurrence:** Common. **Distribution:** Malawi, Mozambique, Zimbabwe, Swaziland, South Africa (Transvaal, KwaZulu-Natal) and Angola.

**Localities:** Lower slopes, above N.A.Nkanda's, Likulezi Valley, *Chapman JD 356* (FHO). Lichenya Plateau, Boma Path, *Chapman JD & Chapman EG 7282* (FHO). Likabula Valley, Nasato Stream source, *Chapman JD & Chapman EG 7372* (FHO). Little Mulosa River, below the Lauderdale Crater, *Chapman JD & Chapman EG 8386* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9110* (FHO).

## HYACINTHACEAE

(previously in Liliaceae)

*Refs.* Stedje 1987, 1996; Wild, 1963-64.

### *Albuca kirkii* (Baker) Brenan

Bulbous perennial herb, 15-70 cm high. Leafless at flowering time. Stems glaucous. Perianth segments white with central green stripe.

**Flowering:** June-July. **Habitat:** In shallow soil over rock in *Brachystegia* woodland. **Altitude:** c. 1200 m. **Occurrence:** Occasional. **Distribution:** D.R. Congo, Rwanda, Kenya, Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Slopes of Thuchila River Valley, *Jackson G 1870* (K). Likabula Gorge, *Vernay AS 16394* (K).

### *Albuca abyssinica* Jacq.

Syn. *Albuca melleri* (Baker) Baker

Bulbous herb, 10-30 cm high. Leafless at flowering time. Perianth segments yellow with broad, green, central stripe.

**Flowering:** September-October. **Habitat:** Bare soil amongst rocks; burnt grassland. **Altitude:** 2000-2400 m. **Occurrence:** Occasional. **Distribution:** Somalia, East Africa, Malawi and Mozambique.

**Localities:** Lichenya Plateau, *Pawek J 3886* (K). Nanderlanda Col, *Strugnell AM 99* (FHO).

### *Drimia robusta* Baker

Bulbous herb with flowering stems, up to 1 m high. Large bulbs, solitary or grouped, protruding well above the soil level, brown very papery scale leaves. No leaves at flowering time. Flowers very pale pink.

**Flowering:** September-October. **Habitat:** Rocks virtually devoid of other vegetation or in burnt montane grassland. **Altitude:** 1800-2110 m. **Occurrence:** Very local. **Distribution:** Malawi to South Africa (KwaZulu-Natal).

**Localities:** Thuchila Shelf, *Chapman JD & Tawakali EJ 5964* (FHO). Lichenya Plateau, *Greenway PJ 6320* (K). On the Saddle between Lichenya Plateau and the Knife-Edge, *Strugnell AM s.n.* (Photo, FHO).

### *Ledebouria revoluta* (L.f.) Jessop

Syn. *Scilla hyacinthina* (Roth) Macbr.; *Hyacinthus revolutus* L.f.

Bulbous herb, up to 25 cm high. Flowers pinkish-lilac.

**Flowering:** November. **Habitat:** Moderately stony soil on a steep slope. **Altitude:** c. 1150 m. **Occurrence:** Sporadic, but often abundant where it occurs. **Distribution:** Widespread in tropical and southern Africa.

**Localities:** Foot of Chambe West Face, *Chapman JD & Chapman EG 8977* (FHO).

### *Scilla lazulina* Wild

Bulbous, glabrous herb, up to about 40 cm high. Flowers deep blue.

**Flowering:** October. **Habitat:** *Brachystegia* woodland and on cliffs on the Lichenya Plateau. **Altitude:** 1400-1950 m. **Occurrence:** Often gregarious. **Distribution:** Mt. Mulanje, Malawi; Namuli Hills, Mozambique and C. & E. Zimbabwe. **Localities:** Likulezi-Ng'ono Valley, *Chapman JD 5970* (FHO, K) & 8977 (FHO). Lichenya Plateau, at the escarpment edge near the Linji Stream, *Chapman JD & Chapman EG 8230* (MO).

### *Scilla ? zambesiaca* Baker

Dainty bulbous herb, up to 25 cm high. Two or three broad lanceolate leaves at flowering time, mauve speckled on the under surface. Corolla green, stamens purple with yellow anthers.

**Flowering:** December. **Habitat:** Stream-fringing bush. **Altitude:** c. 850 m. **Distribution:** Malawi and Mozambique. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 8990* (FHO).

### *Urginea altissima* (L.f.) Baker

Bulbous perennial herb, up to 200 cm high when flowering. Usually flowering before the leaves. Perianth segments white or greenish with a green or purple central band.

**Flowering:** December. **Habitat:** Grassland. **Distribution:** Widely distributed in tropical and southern Africa. **Localities:** No locality on Mulanje given, *Whyte A s.n.* (K).

### *Urginea nyasae* Rendle

Bulbous, perennial herb, up to about 30 cm high. Leafless at flowering time. Stems reddish. Perianth segments white to pale pink with a purple, central stripe.



**Flowering:** September. **Habitat:** Burnt upland grassland. **Altitude:** c. 2100 m. **Occurrence:** Sporadic. **Distribution:** S. Malawi. **Localities:** Below Namisili peak, near the Sombani/Chinzama path, *Strugnell AM et al.* 68 (FHO).

**HYPOXIDACEAE**  
Refs. Nordal et al. 1985; Zimudzi, 1996.

***Hypoxis filiformis* Baker**  
**Herb**, up to about 15 cm high. **Leaves** grass-like, up to 7-8 cm long, 1-2 mm wide, hairy mainly on the margins. **Flowers** yellow in 2-flowered, terminal **inflorescences**.

**Flowering:** September. **Habitat:** Bare ground in montane grassland, often after burning. **Altitude:** c. 2000 m. **Occurrence:** Sporadic and locally common. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and N. & E. South Africa. **Localities:** Lichenya Plateau, close to the C.C.A.P. cottage, *Chapman JD & Chapman EG* 8174 (K). Lichenya Plateau, *Pawek J* 3887 (K). Between the Sombani and Ruo Basins, *Strugnell AM et al.* 74 (FHO).

***Hypoxis parvifolia* Baker**  
**Herb** up to 5 cm high. **Leaves** arcuate, broadly linear, up to 4 cm long, 8 mm at widest part. Long fine hairs on the leaf margin, **peduncles** and **sepals**. **Flowers** yellow in single-flowered **inflorescences**.

**Flowering:** December-June. **Habitat:** In shallow soil over rock or in cracks in the rock at high altitudes. **Altitude:** 2100-2300 m. **Occurrence:** Common. **Distribution:** Malawi, Zimbabwe and South Africa. **Localities:** Above Lichenya C.C.A.P. Hut, *Brummitt RK et al.* 15901 (K). Cilemba Peak, *Chapman JD* 6069 (FHO). Cilemba Peak, *Richards HM* 16586 (K). Between Saddle and Thuchila Shelf, *Wild H* 6183 (K).

***Hypoxis* sp. A of Flora Zambesiaca**  
**Herb**, up to about 20 cm high. **Leaves** gradually tapering to the apex. Whole plant covered in fine silvery hairs. **Inflorescences** overtopping the leaves. **Flowers** yellow, in 5-6-flowered **inflorescences**.

**Flowering:** June-September. **Habitat:** On firebreaks in upland grassland or baked ground in recently burnt woodland. **Altitude:** 1100-1800 m. **Distribution:** Only known from the *Flora Zambesiaca* region. **Localities:** Above Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG* 8870 (FHO). Lichenya Plateau, *Richards HM* 16553 (K).

**ICACINACEAE**

***Apodytes dimidiata* E.Mey. ex Arn.**  
Evergreen **tree**, up to 30 m high, with a smooth,

grey **bole**. **Leaves** ovate-elliptic, glossy. Long, usually reddish, **petioles**. **Flowers** white, fragrant, in loose **inflorescences**.

**Flowering:** November-December. **Fruiting:** November-January. **Habitat:** Forest and forest edge. **Altitude:** 800-1850 m. **Occurrence:** Common. **Distribution:** S.E. Nigeria, Cameroon, Ethiopia and Sudan southwards to the Cape Peninsula in South Africa and Angola. **Localities:** Chitakali Stream on the Boma Path, *Chapman JD & Chapman EG* 6865 (FHO). Below Chambe Peak, *Chapman JD & Chapman EG* 7059 (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG* 7306 (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG* 7655 (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG* 7697 (FHO). Phalombe River Gorge, *Chapman JD & Chapman EG* 7962 (FHO). Likabula Valley, *Chapman JD & Chapman EG* 8485 (FHO). Western slopes of Mchese Mt., *Chapman JD & Chapman EG* 8588 (FHO). Lichenya Plateau at the Forestry hut, *Chapman JD & Chapman EG* 9453 (FHO).

**IRIDACEAE**  
Refs. Goldblatt, 1993, 1996; Hilliard & Burt, 1988, 1991.

***Anomatheca grandiflora* Baker**  
Syn. *Freesia grandiflora* (Baker) Klatt; *Lapeirousia grandiflora* (Baker) Baker  
**Herb**, up to 60 cm high. **Leaves** thin, linear, erect, in a basal tuft. **Inflorescence** a lax spike. **Flowers** red, with a dark spot at base of the 3 lower tepals. The **tepals** form a cup and are more than half the length of the **perianth** tube.

**Flowering:** January-March. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1300 m. **Occurrence:** Sporadic. **Distribution:** D.R. Congo (Katanga), S. Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, KwaZulu-Natal) and Swaziland. **Localities:** Above the gardens at the foot of Chambe Peak, *Chapman JD & Chapman EG* 7102 (MO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG* 7362 (MO). Likabula Valley, *Chapman JD & Chapman EG* 9495 (MO).

***Aristea abyssinica* Pax**  
**Herb**, up to 60 cm high. **Stems** rounded. **Leaves** grasslike. **Flowers** purple-blue.

**Flowering:** October. **Fruiting:** November, June. **Habitat:** Montane grassland. **Altitude:** c. 1850 m. **Distribution:** Nigeria, Cameroon, Ethiopia, East Africa, D.R. Congo, Zambia, Malawi, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal, Cape). **Comments:** In Goldblatt (1993), these specimens from Mt. Mulanje have been provisionally included in *A. abyssinica* (syn. *A. johnstoniana* Rendle). They have the general appearance of a robust form of *A. abyssinica*, but the stems are rounded, rather than flattened and 2-winged. *A. johnstoniana* is only reported from Mt. Mulanje. **Localities:** Ruo Basin, *Chapman JD* 689 (FHO). Near site of the Boma Hut, *Chapman JD & Chapman EG* 8180 (FHO, K, MO).



***Crocoshia aurea* (Hook.) Planch. ssp. *aurea***  
Herb, up to 1-2 m high, with sword-shaped leaves. Flowers orange.

**Flowering:** March. **Fruiting:** July. **Habitat:** Evergreen forest or *Eucalyptus* plantation. **Altitude:** 900-1550 m. **Occurrence:** Very locally common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal, Cape Province). **Localities:** Big Ruo Gorge, *Chapman JD* 674 (FHO). Esperanza, *Chapman JD & Chapman EG* 8422 (FHO).

### ***Dierama formosum* Hilliard**

Herb, up to 1.6 m high. Leaves linear-lanceolate, distichous. Long, slender, drooping racemes of pink flowers.

**Flowering:** October-November. **Fruiting:** February. **Habitat:** Montane grassland. **Altitude:** 1950-2250 m. **Occurrence:** Common. **Distribution:** Mt. Mulanje & Zomba Mt. in Malawi, Mt. Gorongosa in Mozambique, eastern highlands of Zimbabwe and South Africa (E. Transvaal). **Localities:** Thuchila-Chambe path, *Blackmore S et al.* 415 (K). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG* 8032 (E, MO). Lichenya Plateau, *Greenway P* 6317 (K). Chambe Plateau, *Wiche PO N/352* (K).

### ***Dietes iridioides* (L.) Klatt**

Herb, up to 1 m high. Leaves distichous, 1-2 cm wide. Flowers white with yellow or purple markings.

**Flowering:** August-February, flowers appearing sporadically. **Fruiting:** April. **Habitat:** Evergreen forest. **Altitude:** 850-1750 m. **Occurrence:** Locally abundant, but otherwise sporadic. **Distribution:** Ethiopia, E. D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal, Cape Province). **Localities:** Below Lichenya Forestry Hut, by Lichenya River, *Brummitt RK et al.* 15933 (K). Descending from Mulanje hut, *Chapman JD* 586 (K). Just inside entrance to the Crater, *Chapman JD* 6486 (FHO). Chisongeli Forest, above Chisambo, *Chapman JD & Chapman EG* 8122 (K). Mchese Mt., Nthambi Gorge above Misomali, Nkhulambe area, *Chapman JD & Chapman EG* 8837 (FHO).

### ***Gladiolus atropurpureus* Baker**

Herb, up to 75 cm when flowering. Leaves of the flowering stem sheathing, with narrowly lanceolate blades. Flowers purplish-copper.

**Flowering:** November-December. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1950 m. **Occurrence:** Very sporadic. **Distribution:** D.R. Congo (Katanga), Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola. **Localities:** Lichenya Plateau, *Chapman JD & Chapman EG* 8290 (MO). Likabula Valley, *Chapman JD & Chapman EG* 9429 (FHO).

### ***Gladiolus bellus* C.H.Wright**

Herb, up to 90 cm high. Leaves narrowly lanceolate, present at flowering. Flowers white with maroon marks on the lower tepals.

**Flowering:** March-June. **Habitat:** Grassy crags near streams and waterfalls or on shrubby hillsides in montane grassland. **Altitude:** 1300-2200 m. **Occurrence:** Sporadic. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Path from Thuchila Hut to head of Ruo Basin, *Brummitt RK* 9647 (K). Inner face of Chambe Peak, on side towards 'G' block, *Chapman JD* 555 (K). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG* 7363 (K, MO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG* 7363A (MO). Thuchila Shelf, near the forestry hut, *Chapman JD & Chapman EG* 7790 (MO). Base of Chambe Peak, *la Croix I* 699 (K). West Peak, *Richards HM* 16595 (K).

### ***Gladiolus crassifolius* Baker**

Herb, up to 90 cm high when flowering. Leaves present at flowering time, narrowly lanceolate. Flowers pale to deep pink.

**Flowering:** March-June. **Habitat:** Montane grassland, often in wetter areas. **Altitude:** 1550-2400 m. **Occurrence:** Common and widespread. **Distribution:** S.W. Tanzania, Malawi, Mozambique, Zimbabwe, South Africa, Swaziland, Lesotho and W. Angola.

**Localities:** Linji (Lichenya) Plateau, *Chapman JD & Chapman EG* 7196 (MO). Chambe West Face Shelf approach, *Chapman JD & Chapman EG* 7670 (MO). Madzeka, along the Sombani path, *Chapman JD & Chapman EG* 8364 (K). Sombani, halfway up slopes of Namisili, *Chapman JD & Patel IH* 5704 (FHO). Lichenya Plateau, *la Croix I* 457 (K).

### ***Gladiolus dalenii* van Geel**

Herb, up to 1.25 m high. Leaves present at flowering time. Flowers red-orange or yellow streaked with red. Upper tepal hooded.

**Flowering:** December-May. **Habitat:** Montane grassland. **Altitude:** c. 1850 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG* 8227 (MO).

### ***Gladiolus decoratus* Baker**

Herb, up to about 70 cm high when flowering. Leaves present at flowering, linear-lanceolate, drooping. Flowers reddish-orange, with large yellow patches on the lateral tepals.

**Flowering:** December-February. **Habitat:** Stream-fringing woodland, amongst rocks. **Altitude:** c. 850 m. **Occurrence:** Sporadic. **Distribution:** Tanzania, Malawi and Mozambique. **Localities:** Likabula Valley, *Chapman JD & Chapman EG* 9431 (FHO, K).

### ***Gladiolus zambeziacus* Baker**

Herb, up to 75 cm high. Basal leaves narrowly lanceolate to nearly linear, reaching to the base or middle of the spike. Flowers pink to mauve fading to white at the throat.

**Flowering:** March-April. **Habitat:** Exposed sites in montane grassland, in thin soil in rocky crevices. **Altitude:** c. 1500 m. **Distribution:** S. Malawi and adjacent parts of Mozambique.



**Localities:** Lichenya Plateau, *Johnston-Stewart* NGB 265 (E).

*Hesperantha petitiana* (A.Rich.) Baker

Delicate, bulbous herb, up to 35 cm high. Leaves distichous, linear-lanceolate. Flowers pink to lilac.

**Flowering:** February-March. **Habitat:** Montane grassland. **Altitude:** c. 2350 m. **Distribution:** Cameroon, Ethiopia, Kenya, Uganda, Tanzania, Malawi and Zimbabwe.

**Localities:** Chambe Plateau, *Blackmore S et al.* 426 (K) and *Chapman JD* 525 (FHO). Cilemba Peak, *Chapman JD & Chapman EG* 7209 (FHO). Linji (Lichenya) Plateau, at the col above the C.C.A.P. cottage, *Chapman JD & Chapman EG* 7212 (MO).

*Lapeirousia erythrantha* (Klotzsch) Baker

Herb, up to about 60 cm. Leaves flat, up to 8 mm wide. Flowers purplish-blue.

**Flowering:** December-March. **Habitat:** Open *Brachystegia* woodland. **Altitude:** c. 800 m. **Distribution:** D.R. Congo (Katanga), S. & W. Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** At the Tinyade (Likulezi)-F.R. boundary, *Chapman JD & Chapman EG* 8315 (MO).

*Moraea schimperi* (Hochst.) Pic. Serm.

Herb, up to 50 cm high with one sword-shaped leaf per plant. Plants usually growing in clumps. Flowers blue-purple with yellow nectar guides.

**Flowering:** September-December. **Habitat:** Montane grassland in wetter areas, often emerging and flowering after burning. **Altitude:** c. 1850 m. **Occurrence:** Sporadic to locally common. **Distribution:** Widespread in the highlands of tropical Africa.

**Localities:** Linji (Lichenya) Plateau, *Chapman JD & Chapman EG* 8043 (K).

*Moraea thomsonii* Baker

Herb, up to 50 cm high. Wiry stem. One grass-like leaf absent or dead at the base of the stem at flowering time. Flowers pale lilac with orange markings.

**Flowering:** October-November. **Habitat:** Montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Sporadic. **Distribution:** S.W. Tanzania, Malawi, E. Zimbabwe and South Africa (E. Transvaal).

**Localities:** Sombani Basin, *Chapman JD & Chapman EG* 8904 (FHO, K). Lichenya Plateau, *Pawek J* 3795 (K).

JUNCACEAE

*Juncus dregeanus* Kunth

ssp. *bachitii* (Hochst. ex Steud.) Hedb.

Erect, tufted perennial herb. Most of the leaves basal, flat. Flowers in subsessile, globose heads.

**Habitat:** Seepage areas in upland grassland. **Altitude:** c. 1800 m. **Distribution:** Eastern Africa.

**Localities:** Lichenya Plateau, near the forestry cottage, *Chapman JD & Chapman EG* 9458 (FHO).

LAMIACEAE

(Labiatae)

*Refs.* Codd, 1975, 1983, 1985; Harvey, 1996; Iwarsson & Harvey, 2003; Paton, 1992a & b, 1995, 1996; Ryding, 1981, 1986; Sebald, 1980, 1988; Vollesen, 1975.

*Achyrosperrum laterale* Baker

Spreading, soft-wooded shrub, up to 4 m high. Flowers pinkish-red, tightly packed in sessile, lateral inflorescences.

**Flowering:** June-October. **Habitat:** In or at edge of riverine forest. **Altitude:** 800-1250 m. **Occurrence:** Scattered. **Distribution:** C. and S. Malawi and S. Mozambique.

**Localities:** At source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG* 6797 (FHO). Esperanza, *Chapman JD & Chapman EG* 7766 (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG* 9133 (FHO).

*Aeollanthus buchnerianus* Briq.

Semi-procumbent, slightly succulent, shrubby herb, up to about 80 cm high. Leaves aromatic. Flowers pale mauve, bracts purple, in closely-ranked short, axillary spikes.

**Flowering:** April-November. **Habitat:** On seepage rocks or beside paths in upland grassland. **Altitude:** 900-1800 m. **Occurrence:** Common. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, E. Orange Free State), Lesotho, N. Namibia and Angola.

**Localities:** Chambe saddle, *Chapman JD* 5638 (FHO, K). Nkolu Gorge, above Lauderdale, *Chapman JD & Chapman EG* 6767 (FHO, K). Western slopes of Mchese Mt., below the Dome, *Chapman JD & Chapman EG* 8581 (FHO). Likabula Valley, Chapaluka crossing, *Chapman JD & Chapman EG* 9056 (FHO, K).

*Aeollanthus ukamensis* Gürke

Succulent, much-branched, annual herb, up to about 30 cm high. Stems reddish-purple. Small, purplish-pink flowers.

**Flowering:** March-June. **Habitat:** On seepage rocks, among moss. **Altitude:** 1000-1300 m. **Occurrence:** Locally common. **Distribution:** Tanzania and Malawi.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG* 9011 (FHO, K). Mchese Mt., path from Fort Lister Gap, *Iwarsson M & Ryding O* 814 (K).

*Becium obovatum* (E.Mey. ex Benth.) N.E.Br. var. *obovatum*

Herb, up to about 30 cm high, arising annually from a woody rootstock. All parts apart from the petals, covered in short, white hairs. Flowers white to pale mauve, calyx maroon.



**Flowering:** August-September. **Habitat:** Open woodland, burnt grassland. **Altitude:** c. 1400 m. **Occurrence:** Common. **Distribution:** From East Africa to South Africa (Transvaal, KwaZulu-Natal, E. Orange Free State, E. Cape Province), Swaziland and Angola. **Comments:** A typical pyrophyte. **Localities:** Fort Lister to Sombani path, *Chapman JD & Chapman EG 8788* (FHO).

***Haumaniastrum callianthum* (Briq.) Gilli**

Syn. *Acrocephalus callianthus* Briq.

Shrubby, perennial herb, up to 1.5 m high. Small, mauve flowers in tightly-packed heads. Leafy bracts pale mauve.

**Flowering:** June-September. **Habitat:** Amongst shrubs and bracken in damp areas, or pathsides in plantations, *Brachystegia* woodland. **Altitude:** 900-1750 m. **Distribution:** Zambia, Malawi and Mozambique.

**Localities:** Mchese Mt., foot of the western slopes along the Bwaibwai Stream, *Chapman JD & Chapman EG 8621* (FHO). Mchese Mt., between the Namajani and Napolo Gorges, *Chapman JD & Chapman EG 8701* (FHO). Mchese Mt., Nanthali Stream, *Chapman JD & Chapman EG 8856* (FHO).

***Hyptis pectinata* (L.) Poit.**

Herb, up to 2 m high. Leaves ovate, sparingly pubescent above, paler and white-tomentose below highlighting the darker veins. Congested inflorescence of tiny, white flowers.

**Flowering:** August. **Habitat:** In a plantation of *Pinus kesiya*. **Distribution:** From Senegal to Sudan, southwards to Botswana and South Africa (E. Transvaal and KwaZulu-Natal) and Swaziland. **Comments:** A tropical American species naturalised in tropical Africa.

**Localities:** Likabula Valley, Chambe path, *Strugnell AM & Salubeni AJ 1* (FHO).

***Leonotis decadonta* Gürke var. *decadonta***

Erect shrub, up to 4 m high. Flowers bright orange, in many-flowered verticils, calyx lobes of equal length.

**Flowering:** August. **Habitat:** Regrowths among tall grass with shrubs and scattered trees, forest edges. **Altitude:** c. 1300 m. **Occurrence:** Locally abundant. **Distribution:** S. Tanzania, E. Zambia and Malawi.

**Localities:** Below the Chiphalombe Shelf, *Chapman JD & Chapman EG 7895* (FHO). Mchese Mt., path from the Fort Lister Gap, *Iwarsson M et al. 807* (K, MAL, UPS)

***Leonotis ocymifolia* (Burm.f.) Iwarsson**

var. *raineriana* (Vis.) Iwarsson

Syn. *Leonotis velutina* Fenzl

Shrub, up to 4 m high. Leaves broadly ovate, crenate margin, lower surface white or yellow velvety-pubescent. Flowers reddish-orange to cream, in many-flowered verticils. Calyx lobes unequal.

**Flowering:** July-September. **Habitat:** Forest edges, disturbed ground, shrubberies, *Brachystegia* woodland.

**Altitude:** 800-1850 m. **Occurrence:** Sporadic to locally abundant. **Distribution:** Widespread in east and south tropical Africa and southern Africa.

**Localities:** Likabula to Lichenya path, *Chapman JD 5870* (FHO). Tinyade, Likulezi, *Chapman JD & Chapman EG 7782* (FHO). Approach to Chiphalombe Shelf, *Chapman JD & Chapman EG 7857* (FHO). Mchese Mt., ridge between the head streams of the Napolo and Namajani rivers, *Chapman JD & Chapman EG 8696* (FHO).

***Leucas milanjiana* Gürke**

Herb, with a creeping habit up to 80 cm high. White, sessile flowers with orange anthers, clustered at tips of upright, flowering branches.

**Flowering:** January-June. **Habitat:** *Brachystegia* woodland, short grassland, rocky hillsides. **Altitude:** c. 1200-1300 m. **Occurrence:** Common. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** On the path to Sombani, above the Fort Lister forestry depot, *Brummitt RK 11366* (K). Fort Lister Gap, foot of Mchese Mt., *Brummitt RK & Banda EA 9885* (K). Chambe Plateau, *Chapman JD 595* (K). Chambe path, *Richards HM 16711* (K).

***Ocimum gratissimum* L. ssp. *gratissimum***  
var. *gratissimum*

Robust, several-stemmed shrub, up to 2 m high. Whole plant aromatic. Small, white flowers with yellow centres and brown stamens, in close-packed spikes.

**Flowering:** April. **Habitat:** Edge of transition woodland. **Altitude:** c. 1100 m. **Distribution:** Widespread in tropical Africa as far south as Namibia and South Africa (KwaZulu-Natal).

**Localities:** Likulezi Valley, *Chapman JD & Chapman EG 7501* (FHO).

***Plectranthus alboviolaceus* Gürke**

Shrub, up to 4 m high. Strongly aromatic. Flowers white with a bright blue spot at base of upper lobe.

**Flowering:** May-September. **Habitat:** Forest and forest clearings. **Altitude:** 1000-1700 m. **Distribution:** Kenya, Tanzania, N. E. Zambia, Malawi and Mozambique.

**Localities:** Mulosa Gorge (to the Crater), *Chapman JD 6569* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7517* (FHO). Valley of the Napolo Stream, *Chapman JD & Chapman EG 8670* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9159* (FHO). Muluzi Valley, Chisongeli forest, *Chapman JD & Chapman EG 9298* (FHO).

***Plectranthus crassus* N.E.Br.**

Soft-wooded, aromatic shrub, up to about 150 cm high. Stems leafless below with conspicuous leaf-scars, brown or purple above. Leaves ovate, crenate, drooping, paler beneath. Flowers bluish-purple.



**Flowering:** May. **Habitat:** Forest understorey, amongst shrubs in upland grassland. **Altitude:** 1800-2150 m. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Chambe Basin, *Chapman JD 5639* (FHO). Descent to the Knife-Edge from Thuchila Shelf, *Chapman JD & Chapman EG 7624* (FHO).

*Plectranthus dissectus* Brenan

Herb, up to 60 cm high, often in clumps. Leaves dissected. Flowers white with purple veins or pale mauve.

**Flowering:** February-April. **Habitat:** Rocky hillsides and bare ground of fire traces in upland grassland. **Altitude:** c. 1900 m. **Distribution:** Mt. Mulanje and Zomba Mt. in S. Malawi.

**Localities:** Chambe Plateau, path to Sapitwa and Lichenya, *Blackmore S et al. 359* (K). Just below Thuchila Hut, *Brummitt RK 9622* (K). N.W. slopes of Ruu Basin, *Brummitt RK 9703* (K). Lichenya Plateau, *Chapman JD 486* (K). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7195* (K). Sombani path from Fort Lister, *Goyder DJ & Paton AJ 3655* (K).

*Plectranthus elegans* Britten

Soft-wooded shrub, up to 3 m high, aromatic. Stems ascending, branched near apex. Leaves narrowly ovate, serrate to crenate. Flowers deep purple, in lax inflorescences of 4-6 verticils.

**Flowering:** December-June. **Habitat:** Forest edge, shrub-beries in upland grassland. **Altitude:** 1750-2200 m. **Distribution:** Mt. Mulanje and Zomba Mt. in S. Malawi.

**Localities:** Chambe Peak, *Chapman JD 5615* (FHO). Lichenya Plateau C.C.A.P. cottage, *Chapman JD & Chapman EG 6972* (FHO). At Knife-Edge approach, *Chapman JD & Chapman EG 7622* (FHO). Fort Lister to Sombani, *Chapman JD & Chapman EG 8352* (MO). Sombani path, *Chapman JD & Patel IH 5775* (FHO).

*Plectranthus esculentus* (N.E.Br.) G.Taylor  
var. *longipes*

Aromatic, deciduous sub-shrub, up to about 2 m high. Flowers yellow, appearing when leafless.

**Flowering:** July. **Habitat:** Shrub layer of forest. **Altitude:** c. 1000 m. **Distribution:** West Africa, Uganda to South Africa (E. Transvaal and KwaZulu-Natal), Swaziland and Angola.

**Localities:** Western slopes of Mchese Mt., in the Fort Lister Gap, *Chapman JD & Chapman EG 8728* (FHO).

*Plectranthus hadiensis* (Forssk.) E.A.Bruce

Perennial, semi-succulent herb, up to 1.5 m high. Stems and leaves densely tomentose. Flowers mauve to purple, finely pubescent and gland-dotted on lip.

**Flowering:** April-June. **Habitat:** *Brachystegia* woodland, forest margins. **Altitude:** 1300-1700 m. **Distribution:** From Somalia to South Africa (Transvaal, KwaZulu-Natal) and Swaziland.

**Localities:** Foot of Chambe West Face cliffs, *Chapman JD & Chapman EG 8564* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 9055* (FHO).

*Plectranthus mandalensis* Baker

Herb, up to 60 cm high. Stems purplish and slightly fleshy. Leaves ovate, crenate, sometimes purplish, upper surface rough. Flowers white marked with pink, in lax inflorescences.

**Flowering:** February-May. **Habitat:** *Brachystegia* woodland, forest and forest regrowth. **Altitude:** c. 1900 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG 8510* (FHO). Lichenya Plateau, *Chapman JD & Tawakali EJ 5543* (FHO).

*Plectranthus pubescens* Baker

Erect, glandular, pubescent herb, up to 60 cm high. Terminal inflorescences of white or pale mauve flowers.

**Flowering:** September-January. **Habitat:** Forest, rocky stream-banks. **Altitude:** 1000-1300 m. **Distribution:** Tanzania (T7), N. Mozambique, Malawi, E. Zimbabwe.

**Localities:** Chapaluka track, Likabula valley, *Chapman JD & Chapman EG 7107* (FHO). Foot of Mchese Mt., *Chapman JD & Chapman EG 8853* (FHO).

*Plectranthus sanguineus* Britten

Erect shrub, up to 3.5 m high. Stems hairy, leaves towards the top. Leaves small, fan-shaped, crenate in upper half, hairy. Flowers small, blue to purple, in congested, branched racemes.

**Flowering:** August-October. **Habitat:** On fire traces and rocky outcrops in upland grassland. **Altitude:** 1450-2000 m. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Thuchila Plateau, *Chapman JD 417* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 8044* (FHO). Above Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8871* (FHO). Thuchila Shelf, *Chapman JD & Tawakali EJ 5965* (FHO).

*Plectranthus stenosphon* Baker

Herb, up to 70 cm high. Stems procumbent and ascending, sometimes reddish. Leaves broadly ovate, irregularly crenate. Flowers white at the base, distally blue or purple, in condensed inflorescences.

**Flowering:** March. **Habitat:** Exposed, smooth rock-surfaces, forest margins and along paths. **Altitude:** c. 860 m. **Distribution:** S. Malawi and Mozambique (Zambézia, Manica and Sofala).

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9012* (FHO).

*Plectranthus swynnertonii* S.Moore

Shrub, up to 3 m high. Leaves almost round, slightly cordate, irregularly cut margin. Bracts fringed at their apex. Flowers very pale purple.

**Flowering:** May-June. **Habitat:** Undergrowth and edge of montane forest. **Altitude:** 1700-1950 m. **Distribution:** Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).



**Localities:** Lichenya Plateau along the Nessa Path, *Chapman JD & Chapman EG 8511* (FHO). Mchese Mt., at the head of the Napolo Valley, *Chapman JD & Chapman EG 8693* (MO). Mchese Mt., Nampende Valley Forest (east), *Chapman JD & Chapman EG 9160* (FHO).

***Plectranthus sylvestris* Gürke**

Soft-stemmed, aromatic herb or shrub, up to 3 m high. Flowers mid-blue.

**Flowering:** June-September. **Habitat:** Forest. **Altitude:** 1650-2300 m. **Distribution:** Ethiopia, Rwanda, East Africa, N.E. Zambia and Malawi. **Comments:** Chapman comments that the inflorescence smells of over-ripe apples.

**Localities:** Path up to Sombani Basin from Fort Lister Gap, *Brummitt RK 11312* (K). Near top of Little Ruo Path above the waterfall, *Brummitt RK 12332* (K). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 8033* (K). Sombani, at the plateau lip near Litakala Peak, *Chapman JD & Chapman EG 8765* (FHO). Base of West Peak, *Richards HM 16635* (K).

***Plectranthus zombensis* Baker**

Procumbent, spreading, aromatic herb, up to about 60 cm high, rooting at the nodes. Flowers blue.

**Flowering:** February. **Habitat:** Humus-rich soil in montane grassland. **Altitude:** 1900-2100 m. **Occurrence:** Locally abundant. **Distribution:** Mt. Mulanje and Zomba Mt. in S. Malawi.

**Localities:** Path to Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7273* (K). Sombani Basin, *Goyder DJ & Paton AJ 3659* (K).

***Plectranthus aff. dissectus***

Erect, aromatic herb or epiphyte, up to 60 cm high. Stems fleshy. Flowers blue to pale mauve with darker stripes on upper lip.

**Flowering:** January-April. **Habitat:** Forest margins, *Widdringtonia* forest, under Pine Plantations. **Altitude:** c. 1900-2000 m. **Distribution:** Mt. Mulanje and Zomba Mt. in S. Malawi.

**Localities:** Chambe on path to Sapitwa and Lichenya, *Blackmore S et al. 344* (K). 1 km south of Thuchila Hut, *Brummitt RK 9748* (K). Sombani Basin, *Goyder DJ & Paton AJ 3660* (K). Chambe Basin, *Hilliard OM & Burt BL 4611* (K).

***Pycnostachys stuhlmannii* Gürke**

Erect herb, up to 1.5 m high. Leaves sessile, linear or narrowly elliptic. Flowers pale blue in short, loose terminal inflorescences.

**Flowering:** May-June. **Habitat:** Marshy or disturbed ground. **Altitude:** c. 850 m. **Distribution:** Kenya, Tanzania and Malawi

**Localities:** Likabula, *Brass LJ s.n.* (K).

***Pycnostachys urticifolia* Hook.**

Shrub, up to 4 m high. Leaves petiolate, ovate, base truncate, margins regularly crenate. Flowers deep blue in terminal inflorescences.

**Flowering:** May-August. **Habitat:** Forest edges, *Brachystegia* woodland, rocky slopes. **Altitude:** 1750-1800 m. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Chambe Basin, *Chapman JD 5630* (FHO). Likabula Valley, on the Lichenya path, just before the Munye Munye Stream, *Chapman JD & Chapman EG 8534* (FHO).

***Satureja imbricata* (Forssk.) Briq.**

Syn. *Satureja biflora* (Buch.-Ham. ex D. Don) Briq.

Straggling herb, up to 50 cm high. Stems slender, woody, minutely hairy. Leaves sessile, broadly ovate, gland-dotted below, margin thickened. Flowers white.

**Flowering:** August-September. **Habitat:** Beside paths in upland grassland. **Altitude:** c. 2100 m. **Occurrence:** Fairly common. **Distribution:** Mountains of eastern Africa from East Africa to South Africa (Transvaal, E. Cape Province) and Lesotho.

**Localities:** Valley between Namasili & Chinzama, *Strugnell AM et al. 79* (FHO).

***Satureja verneyana* Brenan**

Small, erect shrub, up to 1 m high. Whole plant strongly aromatic (peppermint). Leaves shortly petiolate, ovate-elliptic. Flowers white in a series of terminal verticils.

**Flowering:** May-September. **Habitat:** Upland grassland, usually amongst other shrubs. **Altitude:** c. 2100 m. **Occurrence:** Occasional to locally abundant. **Distribution:** S. Malawi.

**Localities:** Thuchila Shelf, *Chapman JD 5675* (FHO). Between Madzeka Hut & Nayawani Shelf, *Chapman JD & Chapman EG 8803* (FHO). Valley between Namasili & Chinzama, *Strugnell AM et al. 76* (FHO).

***Scutellaria schweinfurthii* Briq.**

ssp. *paucifolia* (Baker) Paton

Syn. *Scutellaria paucifolia* Baker

Erect, pubescent herb, up to about 30 cm high from a woody rootstock. Ovate leaves on separate shoots, not present at flowering time. Flowers purple.

**Flowering:** August. **Habitat:** On fire traces in upland grassland. **Altitude:** c. 1000 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Western slopes of Mchese Mt., *Chapman JD & Chapman EG 8776* (FHO).

***Solenostemon latifolius* (Benth.) J.K.Morton**

Erect, annual herb, up to 60 cm high. Leaves yellowish-green with a purple-brown, central blotch on upper surface. Flowers small, purple.

**Flowering:** March-April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa; South Africa (Transvaal, KwaZulu-Natal) and Swaziland.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 7412* (K). Likabula Valley, *Chapman JD & Chapman EG 9017* (FHO).



***Solenostemon shirensis* (Gürke) Codd**

Spreading shrub, up to 2 m high or more. Aromatic. Leaves ovate, truncate or cordate base, serrated margin. Flowers large, purple.

**Flowering:** June. **Habitat:** In and at edge of riparian forest. **Altitude:** 850-1100 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique (Zambézia, Manica and Sofala) and N. & E. Zimbabwe.

**Localities:** Along the Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6732 & 6756* (FHO). Sombani path, above Fort Lister, *Chapman JD & Chapman EG 7744* (FHO).

***Solenostemon sylvaticus* (Gürke) Agnew**

Much-branched, spreading herb, up to 1 m high. Slightly succulent. Flowers blue to purple in lax inflorescences.

**Flowering:** May, October. **Habitat:** In or at edge of riparian forest. **Altitude:** 1000-1700 m. **Occurrence:** Locally common. **Distribution:** Ethiopia, Uganda, Kenya, Tanzania and S. Malawi.

**Localities:** Mulosa Gorge (to the Crater), *Chapman JD 6575* (FHO). Likabula Valley, on the Lichenya path, *Chapman JD & Chapman EG 9070* (FHO).

***Stachys didymantha* Brenan**

Prostrate herb forming mats, up to 1 m wide or scrambling to 1.5 m. Aromatic. Flowers pink or white with purple markings, 5-6 per node.

**Flowering:** February, May, July, November. **Habitat:** Shrubberies in upland grassland and forest margins. **Altitude:** 1800-2900 m. **Occurrence:** Common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Just below Little Ruo Hut, *Brummitt RK 12267* (K). Linji (Lichenya) Plateau, above C.C.A.P. Hut, *Chapman JD & Chapman EG 7199* (K). Sapitwa, *Chapman JD & Chapman EG 7595* (K).

***Tetradenia riparia* (Hochst.) Codd**

Syn. *Oboza riparia* (Hochst.) N.E.Br.

Strongly aromatic shrub, up to 4 m high, with slightly succulent stems. Leaves pubescent. Flowers small, white or mauve, in tightly packed inflorescences.

**Flowering:** May-August. **Habitat:** Rocky river banks. **Altitude:** 800-1400 m. **Distribution:** Ethiopia, East Africa to S.E. Botswana and South Africa (Transvaal, KwaZulu-Natal), Swaziland, N. Namibia and Angola.

**Localities:** Likulezi Valley, at the Likulezi Ng'ono waterfall, *Chapman JD & Chapman EG 7537* (FHO). Esperanza, *Chapman JD & Chapman EG 7994* (FHO). Low down Likabula Valley, *Chapman JD & Chapman EG 8780* (FHO).

***Tinnea aethiopica* Kotschy ex Hook.f.**

ssp. *stolzii* (Robyns & Lebrun) Vollesen

Syn. *Tinnea stolzii* Robyns & Lebrun; *Tinnea zambesiaca* Baker

Pubescent shrub, up to about 2.5 m high. Leaves

elliptic, paler below. Flowers maroon with yellow stamens.

**Flowering:** March. **Habitat:** Semi-closed mixed woodland. **Altitude:** c. 850 m. **Occurrence:** Fairly common. **Distribution:** Kenya, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Lower slopes, *Blackmore S et al. 1456* (K). Likabula Valley, near the C.C.A.P. House, *Chapman JD & Chapman EG 7323* (FHO).

**LAURACEAE**

***Cassytha filiformis* L.**

Twining, parasitic (non-photosynthetic) herb, up to 3 m long, with a yellow or reddish-yellow, filiform stem. Scale leaves ovate to triangular. Flowers cream in a single spike.

**Flowering:** June. **Habitat:** Woodland. **Altitude:** c. 750-900 m. **Distribution:** Widespread in tropical and subtropical Africa.

**Localities:** Mchese Mt., near Phalombe, *Chapman JD H/666* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9168* (FHO).

***Cryptocarya liebertiana* Engl.**

Canopy tree, up to 25 m high. Leaves ovate, elliptic to elliptic-oblong, 3-veined just above the base of the lamina, nerves pink. Flowers yellowish-green. Fruits ripening through red to purple.

**Flowering:** October-November. **Fruiting:** September. **Habitat:** Forest. **Altitude:** 850-1650 m. **Distribution:** Tanzania, N.E. Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Nakolu Stream, near its source, *Chapman JD & Chapman EG 6799* (FHO). Nasato Stream, below Cilemba, *Chapman JD & Chapman EG 7154* (FHO). Ruo Gorge, at the Savani Stream crossing, *Chapman JD & Chapman EG 8105* (FHO). Muluzi River Gorge, above Chisambo, *Chapman JD & Chapman EG 8120* (FHO). Above Mulosa Drift, *Chapman JD & Chapman EG 8857* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9349* (FHO). Nanchidwa Valley, on the approach to Chisongeli forest, *Chapman JD & Chapman EG 9368* (FHO).

***Ocotea kenyensis* (Chiov.) Robyns & Wilczek**

Tree, up to 40 m high, often with more than one main trunk. Bark is pale brown, thin warty and flaking. Leaves and fruits aromatic. Flowers greenish-white or yellowish. Fruits olive-green, ellipsoid in a brown cupule.

**Fruiting:** June. **Habitat:** Forest. **Altitude:** c. 1700 m. **Occurrence:** Common. **Distribution:** Ethiopia and Sudan to South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Mchese Mt., Nampende Valley forest, *Chapman JD & Chapman EG 9136* (FHO).



## LENTIBULARIACEAE

### *Utricularia appendiculata* E.A.Bruce

Herb, twining up to 60 cm. Leaves linear in a rosette, not present at flowering. Flowers white, cream or pale yellow.

**Habitat:** Boggy ground. **Altitude:** c. 1900 m. **Distribution:** Cameroon, Gabon, D.R. Congo, Rwanda, Burundi, Uganda, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Linji (Upper Lichenya) Plateau, *Chapman JD & Chapman EG 7238* (MO).

### *Utricularia livida* E.Mey.

Delicate herb, up to 5 cm high. Leaves not present at flowering. Flowers pale mauve with two yellow spots.

**Flowering:** May. **Habitat:** Amongst moss on seepage rocks. **Altitude:** c. 1900-2000 m. **Distribution:** Eastern Africa from Ethiopia to South Africa (Cape Province).

**Localities:** Thuchila Shelf, *Chapman JD 5658* (FHO). Linji (Upper Lichenya) Plateau, *Chapman JD & Chapman EG 7237* (MO).

## LINACEAE

### *Hugonia orientalis* Engl.

Scrambling shrub, up to c. 4 m high. Recurved, stiff, short tendrils in subopposite pairs. Leaves oblong to oblanceolate, margin dentate. Flowers solitary in leaf axils. Fruits fleshy, yellow, globose.

**Fruiting:** June. **Habitat:** Wooded hillside. **Altitude:** c. 850 m. **Occurrence:** Local. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Slopes of Chikomwe Hill, *Chapman JD & Chapman EG 7721* (FHO).

### *Linum thunbergii* Eckl. & Zeyh.

Single-stemmed herb, up to 40 cm or more high. Leaves opposite, becoming alternate towards the inflorescence. Flowers yellow.

**Flowering:** February. **Habitat:** Moss and grass-covered seepage rocks in upland grassland. **Altitude:** c. 2000 m. **Occurrence:** Frequent. **Distribution:** Tanzania, Malawi, Zimbabwe, South Africa (Transvaal, KwaZulu-Natal to the Cape) and Angola.

**Localities:** Chambe, path to Sapitwa and Lichenya, *Blackmore S et al. 361* (K). Sombani Basin, foot of Matambale, *Brummitt RK 11344* (K).

## LOGANIACEAE

(includes Buddlejaceae)

### *Anthocleista grandiflora* Gilg

Tree, up to 25 m high or more. Leaf-scars form prominent circular ridges on young stems.

Leaves sessile, obovate, papery, up to 70 cm long × 25 cm wide. Flowers white. Fruits ellipsoid.

**Fruiting:** October. **Habitat:** Riparian forest. **Altitude:** c. 800 m. **Distribution:** D.R. Congo and Uganda to South Africa (Transvaal) and Swaziland.

**Localities:** Below the entrance to the Mulosa Gorge, below the Lauderdale Crater, *Chapman JD 6527* (FHO).

### *Buddleja salviifolia* (L.) Lam.

Shrub, up to 6 m high. Leaves shortly petiolate to sessile, opposite, dark and finely bullate above, covered with orange-brown hairs below. Flowers mauve, fragrant.

**Flowering:** July-February. **Habitat:** Montane grassland, among other shrubs or at forest edges. **Altitude:** 1800-2100 m. **Occurrence:** Common. **Distribution:** On the mountains from S. Tanzania to Zimbabwe and Mozambique; South Africa (N. Transvaal to the Cape) and Angola.

**Localities:** Sombani, *Chapman JD 394* (FHO). Lichenya Plateau, *Chapman JD 5666* (FHO). Linji (Upper Lichenya) Plateau, *Chapman JD & Chapman EG 7258* (FHO).

### *Mostuea brunonis* Didr. var. *brunonis*

Slender shrub, up to 2-3 m high. Small, opposite, ovate leaves. Flowers white.

**Flowering:** July-November. **Habitat:** Undergrowth of forest. **Altitude:** 850-1050 m. **Occurrence:** Common. **Distribution:** Throughout tropical Africa.

**Localities:** Big Ruo Gorge, about a mile up the path from Lujeri Power Station, *Chapman JD 605* (FHO). Just inside Lauderdale Crater entrance, *Chapman JD 6482* (FHO). Big Ruo Valley, *Chapman JD & Chapman EG 9399* (FHO).

### *Nuxia congesta* R.Br. ex Fresen.

Shrub or tree, up to 23 m high, usually 8-15 m. Leaves shiny, elliptic to obovate, in 3s. Flowers white, fragrant, in densely-packed inflorescences.

**Flowering:** March-September. **Habitat:** In or at the edge of montane forest, as isolated specimens or in shrubby clumps in grassland. **Altitude:** 1450-2150 m. **Occurrence:** Sporadic. **Distribution:** Widespread in the upland areas of tropical Africa, southwards to the eastern Cape and Angola.

**Localities:** Thuchila Plateau, *Chapman JD 416* (FHO). Mparamatta path, Chambe, *Chapman JD 2122* (FHO). Approach to Cilemba from the Likhabela Valley, *Chapman JD & Chapman EG 7277* (FHO). Chambe Shelf, above Mwana Mlanje, *Chapman JD & Chapman EG 7608* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 7859* (FHO). Chiphalombe Stream just below the entrance to the top gorge, *Chapman JD & Chapman EG 7989* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8772* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9156* (FHO). Head of the Big Ruo Valley, *Chapman JD & Chapman EG 9387* (FHO). Thuchila Shelf, *Chapman JD & Patel IH 5692* (FHO).

### *Nuxia floribunda* Benth.

Tree, up to 25 m high. Leaves opposite or in 3s. Flowers white. Fruits brown.

**Fruiting:** Before October. **Habitat:** Forest or forest edge.



**Altitude:** c. 950 m. **Distribution:** E. D.R. Congo, Uganda and Tanzania to South Africa (as far as S. Cape).

**Localities:** Nanchidwa Valley, below Chisongeli forest, *Chapman JD & Chapman EG 9370* (FHO).

### *Nuxia oppositifolia* (Hochst.) Benth.

**Shrub** or small tree, up to about 8 m high. **Leaves** always in opposite pairs, narrowly elliptic, bluntly serrate. **Flowers** white.

**Flowering:** April-June, has been recorded as flowering in January. **Habitat:** Streambank tree of *Brachystegia* woodland. **Altitude:** 800-1100 m. **Occurrence:** Common. **Distribution:** From Sudan to South Africa (KwaZulu-Natal) and Angola.

**Localities:** Between Mwana Mlanje & Thuchila Streams, *Chapman JD 375* (FHO). Phalombe River, *Chapman JD 375A* (FHO). Likabula Valley, Chapaluka River, Dziwe la Nkhilamba, *Chapman JD & Chapman EG 7074* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7487* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8958* (FHO).

### *Strychnos cocculoides* Baker

Deciduous, spiny **shrub** or small tree, up to 7 m high. **Bark** corky, longitudinally ridged. **Leaves** ovate, glabrous above, hairy beneath. **Flowers** greenish-white. **Fruit** globose, resembling an orange, yellow or orange speckled with green.

**Fruiting:** July. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900-1050 m. **Occurrence:** Sporadic. **Distribution:** Zambia, Malawi, Mozambique, Zimbabwe, Botswana and South Africa. **Localities:** On the ridge between the Likulezi and Nandiwo Streams, *Chapman JD & Chapman EG 7777* (FHO). Western slopes of Mchese Mt, *Chapman JD & Chapman EG 8744* (FHO).

### *Strychnos henningsii* Gilg

Evergreen **tree**, up to 20 m high. **Bark** smooth, pale grey, flaking to expose a brown underbark. **Flowers** creamy-yellow. **Fruits** ellipsoid, yellow to orange.

**Flowering:** April-September. **Fruiting:** November. **Habitat:** Understorey of forest. **Altitude:** 800-1650 m. **Distribution:** Somalia and Ethiopia to South Africa (E. Cape Province) and Angola.

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD & Chapman EG 6638* (FHO). Source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6789* (FHO). Likulezi River crossing near Likulezi Farm, *Chapman JD & Chapman EG 7428* (FHO). Below Chambe West Face, *Chapman JD & Chapman EG 7758* (FHO). Phalombe River Gorge, *Chapman JD & Chapman EG 7992* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8970* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9210* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9315* (FHO). Malilima (Chisongole) Forest, *Chapman JD & Chapman EG 9537* (FHO).

### *Strychnos innocua* Delile

Deciduous **shrub** or small tree, up to 8 m high. **Leaves** obovate, dull, mid-green, shortly hairy on

both surfaces. **Flowers** creamy-yellow. **Fruits** globose, up to 7.5 cm diameter, ripening yellow.

**Fruiting:** September. **Habitat:** Woodland. **Altitude:** c. 900 m. **Distribution:** Tropical Africa.

**Localities:** Foot of Mchese Mt., the S.E. corner above Misomali Nkhulambe area, *Chapman JD & Chapman EG 8841* (FHO).

### *Strychnos lucens* Baker

Canopy **liane**, 30 m. Paired, coiled, woody **tendrils**. **Leaves** opposite, leathery, dark green and shiny above. **Flowers** green-yellow. **Fruits** globose, up to 5 cm diameter, bluish-green ripening yellow.

**Flowering:** October. **Fruiting:** October-April. **Altitude:** 1000-1250 m. **Distribution:** D.R. Congo, East Africa, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Base of Nakaye Stream, Likabula forest station, *Chapman JD 377bis* (FHO). Above Esperanza, *Chapman JD & Chapman EG 6708* (FHO). Source of Nasato Stream, Likabula Valley, *Chapman JD & Chapman EG 7339 & 7419* (FHO).

### *Strychnos madagascariensis* Poir.

**Shrub** or tree, up to 10-12 m high. **Leaves**, opposite, coriaceous, suborbicular to ovate with a rounded apex, hairy below. **Flowers** creamy-yellow. **Fruits** globose, up to 7-8 cm diameter, bluish-green ripening yellow.

**Fruiting:** June. **Habitat:** Woodland. **Distribution:** East Africa to South Africa.

**Localities:** Near Kambenje's, Thuchila, *Chapman JD 379* (FHO).

### *Strychnos mitis* S.Moore

Evergreen **tree**, up to 30 m high. **Leaves** acuminate, glabrous, dark green and shiny above. **Flowers** creamy-yellow. **Fruits** subglobose, 1-2 cm in diameter, ripening yellow.

**Fruiting:** July. **Habitat:** Forest. **Altitude:** 1100-1300 m. **Distribution:** Sudan and Ethiopia to the eastern Cape and Angola.

**Localities:** Below Chambe West Face, *Chapman JD & Chapman EG 7764* (FHO). Western slopes of Mchese Mt., source of the Namajani Stream, *Chapman JD & Chapman EG 8603* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9176* (FHO).

### *Strychnos potatorum* L.f.

Deciduous small **tree**, up to 18 m high. **Bark** smooth, silvery-grey. **Flowers** creamy-yellow. **Fruits** blue-black, 1-3 cm in diameter.

**Fruiting:** April, August. **Habitat:** Open, rocky slopes, dry woodland, forest. **Altitude:** 550-1100 m. **Distribution:** East Africa to N. South Africa.

**Localities:** Western slopes of Mchese Mt., along the Namajani Gorge, *Chapman JD & Chapman EG 8667* (FHO). Foot of Mchese Mt., Nandiwo Valley, *Chapman JD &*



Chapman EG 9234 (FHO). Lichenya F.R., T.A. Mabuka's, Milonde Court, Chapman JD & White F 8427 (FHO).

***Strychnos spinosa* Lam.**

Deciduous, spiny shrub or small tree, up to 10 m high. Leaves and flowers mainly on short, side shoots. Flowers pale green. Fruits green ripening yellow, resembling an orange.

**Flowering:** October-November. **Habitat:** Transition woodland. **Altitude:** c. 850 m. **Distribution:** Tropical and South Africa.

**Localities:** Likabula Valley, Chapman JD & Chapman EG 8898 (FHO). Far down the Likabula Valley, Chapman JD & Chapman EG 8947 (FHO).

**LORANTHACEAE**

Refs. Polhill & Wiens, 1997, 1998.

***Agelanthus nyasicus* (Baker & Sprague) Polhill & Wiens**

Parasitic shrub, up to 1.5 m. Leaves lanceolate to ovate-elliptic, bluntly pointed. Flowers orange.

**Fruiting:** August. **Habitat:** Open woodland. **Altitude:** c. 1350 m. **Distribution:** S.E. D.R. Congo, Tanzania, Zambia, Malawi, N. Mozambique, Zimbabwe and Botswana. **Localities:** Chiphalombe Valley, below the shelf, Chapman JD & Chapman EG 7918 (FHO).

***Agelanthus sp.1:***

(sensu White & al. 2001: 349)

Parasitic shrub. Leaves lanceolate-elliptic. Flowers immature.

**Flowering:** From August. **Habitat:** Evergreen forest, on *Englerophytum magalismontanum*. **Altitude:** c. 1500 m. **Distribution:** Not known. **Comments:** Appears to be a new species but more material is needed.

**Localities:** Chiphalombe, between the gorges, Chapman JD & Chapman EG 7985 (FHO).

***Englerina kwaiensis* (Engl.) Polhill & Wiens**

Parasitic shrub, glabrous. Leaves lanceolate to ovate-elliptic, acuminate. Flowers orange to red.

**Flowering:** April. **Habitat:** Sub-montane/mid-altitude forest transition. **Altitude:** c. 1600 m. **Distribution:** Tanzania (Usambara Mts.) and Malawi (Mt. Mulanje).

**Localities:** Malalima Forest (N.E. extension of Chisongole), Chapman JD & Chapman EG 9538 (FHO).

***Globimetula mweroensis* (Baker) Danser**

Parasitic shrub. Leaves usually ternate, yellowish-green, slightly fleshy. Flowers crimson-red. Fruit subglobose.

**Fruiting:** July. **Habitat:** Mixed woodland, on *Uapaca kirkiana*. **Altitude:** c. 950 m. **Distribution:** D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Mchese Mt., low down the western slopes close to Bwaibwai nursery, Chapman JD & Chapman EG 8729 (FHO).

***Phragmanthera usuiensis* (Oliv.) M.Gilbert**

ssp. ***sigensis*** (Engl.) Polhill & Wiens

Parasitic shrub. Leaves dark green above, oblong-lanceolate, leathery. Flowers in bud swollen at apex, orange-red on the head and corolla tube, yellow below the head. Fruit ellipsoid, blue-green.

**Flowering:** January-May. **Fruiting:** May. **Habitat:** On a variety of hosts in forest and *Brachystegia* woodland. **Altitude:** 1000-1500 m. **Distribution:** E. & S. Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Likabula Valley, Chapaluka Stream, Dziwe la Nkhalamba, Chapman JD & Chapman EG 7073 (FHO). Likabula Valley, at the end of the Chapaluka track, Chapman JD & Chapman EG 8542 (FHO). Mchese Mt., Nampende Valley, Chapman JD & Chapman EG 9224C (FHO).

***Plicosepalus kalachariensis* (Schinz) Danser**

Parasitic shrub. Leaves narrowly oblong, light green. Flowers bright red. Fruit red, urceolate.

**Flowering:** July. **Habitat:** Woodland, on *Brachystegia boehmii*. **Altitude:** c. 1100 m. **Distribution:** Central Tanzania to South Africa (Transvaal and KwaZulu-Natal), Namibia and Angola.

**Localities:** Mchese Mt., western slopes above Bwaibwai forest village, Chapman JD & Chapman EG 8741 (FHO).

***Tapinanthus dependens* (Engl.) Danser**

Parasitic shrub. Leaves dull green, coriaceous, linear-lanceolate. Flowers pink, head green in bud darkening to black. Fruit red.

**Flowering:** March. **Habitat:** Savanna woodland. **Distribution:** S. D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Angola.

**Localities:** Below Chisongole, Newman EI & Whitmore TC 588 (BM).

***Tapinanthus erianthus* (Sprague) Danser**

Parasitic on *Dichrostachys cinerea*. Leaves opposite, sessile, glaucous, heart-shaped. Flowers dusky red. Fruits red.

**Flowering:** July. **Habitat:** Miombo woodland, forest edges. **Altitude:** c. 1200 m. **Distribution:** S. D.R. Congo, S. Tanzania, Zambia, Malawi, Mozambique, Zimbabwe.

**Localities:** Mchese Mt., Nandiwo Valley, Chapman JD & Chapman EG 9170 (FHO).

***Tapinanthus forbesii* (Sprague) Wiens**

Parasitic. Leaves rounded, up to 9 cm long × 9 cm wide, coriaceous, glaucous. Flowers wine-red, blackish on the corolla segments.

**Flowering:** July. **Habitat:** Woodland, on *Uapaca kirkiana*. **Altitude:** c. 950 m. **Distribution:** E. D.R. Congo, S.E. Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (N.E. Transvaal) and Angola.

**Localities:** Mchese Mt., low down the western slopes close to Bwaibwai nursery, Chapman JD & Chapman EG 8730 (FHO).



## MALVACEAE

### *Abutilon longicuspe* Hochst. ex A.Rich.

Soft-wooded, short-lived shrub or small tree, up to 6-8 m high. Leaves broadly ovate-cordate, lower surface grey, densely hairy. Flowers pale mauve. Fruit depressed globose, densely stellate hairy.

**Flowering:** Ending about September. **Fruiting:** September. **Habitat:** Forest margin. **Altitude:** c. 1550 m. **Occurrence:** Locally abundant. **Distribution:** Eastern and southern tropical Africa.

**Localities:** Above Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8865* (FHO).

### *Abutilon mauritianum* (Jacq.) Medik.

Erect, regularly-branched, soft-wooded shrub, up to about 3 m high. Leaves suborbicular-cordate, lower surface grey and velvety. Flowers bright yellow. Fruits on long pedicels, hairy, 'crown'-shaped.

**Flowering:** August. **Fruiting:** August. **Habitat:** Dense, tall thicket. **Altitude:** c. 1400 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa and South Africa (Transvaal, KwaZulu-Natal) and Swaziland.

**Localities:** Chiphalombe Valley below the shelf, *Chapman JD & Chapman EG 7928* (FHO).

### *Azanza garckeana* (F.Hoffm.) Exell & Hillcoat

Small tree, up to about 10 m high. Leaves 3-5 palmately lobed, almost glabrous above, stellate-pubescent below. Flowers yellow or purplish with dark red centre. Fruits subglobose, hairy, up to 4 cm diameter.

**Fruiting:** June. **Habitat:** Woodland. **Occurrence:** Scattered. **Distribution:** Eastern and southern tropical Africa.

**Localities:** Just inside the F.R. boundary east of boundary beacon no. 90, *Chapman JD & Chapman EG 7728* (FHO).

### *Hibiscus burtt-davyi* Dunkley

Robust shrub, up to 3-4 m high. Stems and leaves covered in rough orange-brown hairs. Leaves suborbicular to broadly-elliptic, 3-5 lobed. Flowers white and maroon. Fruits subglobose, hairy, up to 12 mm long × 13 mm wide.

**Flowering:** July-September. **Habitat:** Exploited cedar forest and forest edges. **Altitude:** 1800-2150 m. **Occurrence:** Locally common. between Chambe and the Saddle, *Strugnell AM 37* (FHO). **Distribution:** S. Malawi, C. Mozambique and E. Zimbabwe.

**Localities:** Nayawani and Fort Lister, *Chapman JD 393* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7931* (FHO). On the western side of Mchese Mt., below the summit ridge at the head of the Napolo Valley, *Chapman JD & Chapman EG 8692* (FHO).

### *Hibiscus fuscus* Garcke

Erect shrub, up to 3 m high. Green stems and fruits densely covered in dark brown, bristle-like hairs. Leaves ovate, serrated margin, roughly hairy. Flowers white. Fruits subglobose.

**Flowering:** Ending August. **Fruiting:** August. **Habitat:** Edge of riparian forest. **Altitude:** c. 1200 m. **Distribution:** Ethiopia to South Africa.

**Localities:** Mchese Mt., along the Napolo Stream above the Fort Lister road, *Chapman JD & Chapman EG 8810* (FHO).

### *Hibiscus surattensis* L.

Herbaceous creeper. Stem, petioles, midrib on lower leaf surface and calyx bearing tiny, curved prickles. Leaves often 3-lobed. Flowers yellow and maroon. Fruit globose-ovoid.

**Fruiting:** March. **Habitat:** Woodland. **Altitude:** c. 1200 m. **Distribution:** Widespread in tropical Africa.

**Localities:** In the F.R. just below the Linji cliffs, *Chapman JD & Chapman EG 7335* (FHO).

### *Pavonia columella* Cav.

Erect, single-stemmed shrub, up to 3 m high. Leaves broadly ovate to suborbicular, hairy, 3-5 lobed. Flowers mauve.

**Flowering:** July. **Habitat:** *Brachystegia* woodland, among rocks in overflow channel, forest edges. **Altitude:** 1300-1850 m. **Distribution:** Uganda to South Africa (Cape).

**Localities:** Above Likulezi Ng'ono waterfall, *Chapman JD H618* (K). Western slopes of Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8720* (FHO, K).

### *Sida acuta* Burm.f.

Erect shrub, up to about 1 m high, sometimes more. Leaves lanceolate, serrated. Flowers yellow, axillary, solitary or paired.

**Flowering:** May. **Fruiting:** May. **Habitat:** Roadsides and cultivated ground. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa, extending into South Africa (Transvaal, KwaZulu-Natal) and Namibia.

**Localities:** Likabula area, *Chapman JD 609* (K).

## MELASTOMATACEAE

Ref. Fernandes & Fernandes, 1960-61.

### *Dissotis canescens* (E.Mey. ex Graham) Hook.f.

Upright shrub, up to 2 m high. Leaves opposite, very shortly petiolate, linear-oblong, greyish-green on lower surface. Flowers mauve, about 3 cm across, in dense, axillary inflorescences

**Flowering:** June-August. **Habitat:** In damp ground, usually by a stream in *Brachystegia* woodland or strips of forest. **Altitude:** 750-1200 m. **Distribution:** Widespread in tropical and South Africa.



**Localities:** Mchese Mt., lower slopes, *Chapman JD 583* (FHO). Below Phalombe Gorge, *Chapman JD & Chapman EG 7866* (FHO). Mchese Mt., above Fort Lister Gap, *Chapman JD & Chapman EG 8813* (FHO).

*Dissotis cryptantha* Baker

Much-branched shrub, up to 2 m high. Leaves opposite, subsessile, narrowly elliptic-oblong, silky-hairy on both surfaces. Flowers bluish-purple, up to about 7 cm across.

**Flowering:** May. **Habitat:** Swampy area in *Brachystegia* woodland. **Altitude:** c. 800 m. **Distribution:** Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Likabula Forest Station, *Chapman JD 572* (FHO).

*Dissotis johnstoniana* Baker f.

var. *johnstoniana*

Shrub, up to 3 m high. Leaves opposite, large, ovate-lanceolate, dark green above, yellow-green below, both surfaces roughly hairy. Flowers deep pinkish-purple, in lax inflorescences. Calyx glabrous.

**Flowering:** May-August. **Habitat:** In low scrub over sheet rock, rocky places at forest edge and in upland grassland. **Altitude:** 1700-2000 m. **Occurrence:** Common. **Distribution:** Malawi (Mt. Mulanje) and Mozambique (Gúruè Mts.)

**Localities:** Little Ruo path, *Chapman JD 391* (FHO). Lichenya Plateau, *Chapman JD 5855* (FHO). Thuchila Shelf, *Chapman JD & Chapman EG 7792* (FHO). Chiphalombe Gorge, *Chapman JD & Chapman EG 7953* (FHO). Mchese Mt., the western slopes on the spur between the head streams of the Namajani & Napolo, *Chapman JD & Chapman EG 8697* (FHO). Fort Lister forestry office to Sombani Plateau, *Chapman JD & Chapman EG 8751* (FHO). Madzeka hut, *Chapman JD & Patel IH 5724* (FHO).

*Dissotis johnstoniana* Baker f.

var. *strigosa* Brenan

Similar to var. *johnstoniana* but calyx and receptacle densely strigose, with long, white bristles, and the inflorescence is shorter and denser.

**Habitat:** Rocky, grassy slopes. **Altitude:** c. 1950-2100 m. **Occurrence:** Frequent to local. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Chambe Plateau, *Brass LJ 16757* (BM). Thuchila Plateau, *Newman EI & Whitmore TC 200* (BM, SRGH).

*Dissotis princeps* (Bonpl.) Triana var. *princeps*

Shrub, up to 5 m high. Leaves ovate-lanceolate, with a rounded base and pointed apex, hairy. Flowers dark purple, in dense inflorescences. Receptacle appendages with dense, long, strong bristles.

**Flowering:** May-July. **Habitat:** In wet places, i.e. near rivers and waterfalls and irrigation channels. **Altitude:** 800-1400 m. **Occurrence:** Common. **Distribution:** Tropical and South Africa.

**Localities:** Phalombe Gorge, *Chapman JD 579* (FHO). Likulezi Valley, at the Likulezi Ng'ono waterfall, *Chapman JD & Chapman EG 7527* (FHO). Tinyade, Likulezi, *Chapman JD & Chapman EG 7778* (FHO).

*Dissotis senegambiensis* (Guill. & Perr.) Triana var. *senegambiensis* forma *senegambiensis*

Erect herb or shrub, up to 2 m high. Stems reddish with pale, spreading bristly hairs. Leaves opposite, elliptic, well-spaced on stem, sparsely appressed hairy. Flowers purple. Receptacle covered in long, white, stellate hairs.

**Flowering:** July. **Habitat:** Damp places. **Altitude:** c. 800 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula Forest Station, *Chapman JD 608* (K, SRGH). Tinyade, Likulezi, *Chapman JD & Chapman EG 7784* (FHO).

*Memecylon natalense* Markgr.

Small tree, up to about 6 m high. Leaves opposite, ovate to elliptic, with invisible venation except for midrib. Flowers small and white. Fruits globose, ripening black.

**Fruiting:** September. **Habitat:** Forest understorey. **Altitude:** 1250-1800 m. **Distribution:** Malawi (Mt. Mulanje), Mozambique (Gúruè Mts.) and South Africa (KwaZulu-Natal).

**Localities:** Ruo Gorge, at Savani Stream crossing, *Chapman JD & Chapman EG 8098* (FHO). Lichenya Plateau, in the Nessa Path Forest, *Chapman JD & Chapman EG 8506* (FHO). Chisongeli Forest (West), *Chapman JD & Chapman EG 9292* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9332* (FHO).

*Memecylon sansibaricum* Taub.

Tree, up to 15 m high, but usually less, with drooping branches. Bark smooth, pale grey, papery, flaking. Small, fragrant, blue flowers in axillary clusters. Fruits black.

**Flowering:** March-November. **Fruiting:** November-January. **Habitat:** Forest understorey. **Altitude:** 550-1400 m. **Occurrence:** Common. **Distribution:** S.W. Tanzania, Zambia, S. Malawi and Mozambique.

**Localities:** Mulosa Gorge, above the Boma water intake below Lauderdale Crater, *Chapman JD 6509* (FHO). Lichenya F.R., T.A. Mabuka's Milonde Court, *Chapman JD 6577* (FHO). Above Esperanza, along the Pamba Stream gorge, *Chapman JD & Chapman EG 5712* (FHO). Head of the Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6784* (FHO). Below Chambe Peak, *Chapman JD & Chapman EG 7052* (FHO). Along the Nasato Stream, below Cilemba, *Chapman JD & Chapman EG 7157* (FHO). Ruo Gorge, at the Savani Stream, *Chapman JD & Chapman EG 8100* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9175* (FHO).

*Tristemma mauritianum* J.F.Gmel.

Shrub, up to about 1.5 m high. Stems sharply 4-angled, slightly winged. Leaves broadly elliptic,



roughly hairy. Flowers pale purplish-pink, seldom more than one flower open at a time in any inflorescence.

**Flowering:** December. **Habitat:** Near water. **Altitude:** c. 900 m. **Distribution:** Widespread in tropical Africa. **Localities:** Chitakali Stream, *Chapman JD & Chapman EG 6932* (FHO).

MELIACEAE  
Ref. Styles & White, 1991.

*Ekebergia benguelensis* (Welw.) C.DC.  
Small tree, up to about 7 m high. Bark thick and corky with crowded leaf scars. Leaflets ovate-oblong, lower surface whitish, velvety-hairy. Flowers white, tinged pink. Fruits red, fleshy. **Flowering:** September. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1000 m. **Occurrence:** Sporadic. **Distribution:** S. D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola. **Localities:** Chambe Plateau, *Chapman JD 888* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8519 & 9488* (FHO). Above Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8858* (FHO).

*Ekebergia capensis* Sparrm.  
Tree, up to 35 m high. Branchlets smooth with scattered leaf scars and large white lenticels. Leaflets lanceolate and tapering at apex, usually glabrous. Flowers white or pinkish. Fruits dark red, fleshy. **Flowering:** September-November. **Fruiting:** January. **Habitat:** Mid-altitude or montane forest, sometimes transition woodland. **Altitude:** 700-1900 m. **Distribution:** Widespread in tropical Africa, extending into South Africa to the eastern Cape. **Localities:** Below the F.R. boundary, beside the Nsaka Stream at Mwana Mlanje, below Chambe Peak, *Chapman JD & Chapman EG 7060* (FHO). Likabula Valley, Nasato Stream source, *Chapman JD & Chapman EG 7388* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8063* (FHO). Northern foot of Mchese Mt., along the Nandiwo Stream, *Chapman JD & Chapman EG 8628* (FHO). Mchese Mt., well up the Napolo Stream, *Chapman JD & Chapman EG 8673* (FHO). Fort Lister Forestry Office to Sombani Plateau, *Chapman JD & Chapman EG 8750* (FHO). Mimosa Tea Research Station, *Chapman JD & Chapman EG 9373* (FHO).

*Khaya anthotheca* (Welw.) C.DC.  
Syn. *Khaya nyasica* Baker f.  
Tree, up to 35 m or more high. Trunk straight and unbranched for a considerable height. Bark smooth but exfoliating in small, circular pieces. Leaves, up to 30 cm long, glabrous, pinnate. Flowers white, fragrant. Capsule, 4-6 cm in diameter, dehiscent.

**Flowering:** October-November. **Habitat:** Riparian, lowland or mid-altitude forest. **Altitude:** 550-1000 m. **Occurrence:** Frequent, sometimes co-dominant with *Newtonia buchananii*. **Distribution:** From Sierra Leone eastwards to Uganda and Tanzania, and southwards to Mozambique, Zimbabwe and Angola. **Localities:** Lichenya F.R., T.A. Mabuka's Milonde Court, *Chapman JD 6610* (FHO). Above Esperanza, Pamba Stream, *Chapman JD 6669 & 6703* (FHO). Chitakali Stream crossing on the Boma Path, *Chapman JD & Chapman EG 6835* (FHO).

*Lepidotrichilia volkensii* (Gürke) Leroy  
Small, arching tree, up to about 10 m high. Flowers cream, fragrant. Fruits small, subglobose, covered with stellate hairs. **Flowering:** September-October. **Habitat:** Forest understorey and rocky river banks. **Altitude:** 1100-1550 m. **Occurrence:** Local. **Distribution:** Ethiopia and Sudan to Malawi. **Localities:** Muluzi River Gorge, above Chisambo, *Chapman JD & Chapman EG 8117* (FHO). Above the Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8864* (FHO).

*Trichilia dregeana* Sond.  
Tree, up to 30 m or more high. Bole unbranched for 11-12 m, fluted for half this height. Leaves pinnate, up to 50-60 cm long, leaflets acuminate. Flowers white, fragrant. Fruit a capsule, 3-5 cm diameter. **Flowering:** October. **Fruiting:** January. **Habitat:** Riparian forest. **Altitude:** 550-1150 m. **Distribution:** Widespread in tropical Africa, but a gap between West and eastern Africa. **Localities:** Mulosa Stream, at the Mulanje Boma water intake at the entrance to the Crater gorge, above Lauderdale, *Chapman JD 6560* (FHO). Along the Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6728* (FHO). Likabula Valley, Nasato source, *Chapman JD & Chapman EG 7337* (FHO). Ruw River, Ruw, *Chapman JD & Chapman EG 7472* (FHO).

*Trichilia emetica* Vahl  
Tree, up to 20 m high. Leaves very dark green, pinnate. Leaflets rounded at apex, hairy on under surface. Flowers greenish, fragrant. Fruit a capsule, ovoid-globose, up to 2.5 cm long × 1.8 cm wide. **Flowering:** August. **Habitat:** Riverside tree at the foot of Mt. Mulanje. **Distribution:** Senegal to Ethiopia, southwards to South Africa (Transvaal, KwaZulu-Natal). **Localities:** Beside Namasona Stream, Nolo Hill near Thuchila River, *Chapman JD 414* (FHO).

*Turraea holstii* Gürke  
Small, spreading tree, up to about 6 m high. Leaves simple, glabrous but with tufts of hairs in axils of secondary veins with the midrib. Flowers white, on long, slender pedicels. Capsules glabrous, containing black seeds with red arils.



**Fruiting:** May-August. **Habitat:** Forest understorey. **Altitude:** 550-1400 m. **Distribution:** Ethiopia, Somalia and Sudan, southwards to Malawi.

**Localities:** Chambe shelf, above Mwana Mlanje at the foot of the Chambe cliffs, *Chapman JD & Chapman EG 7609* (FHO). Phalombe River, below the gorge, *Chapman JD & Chapman EG 7876* (FHO). Chiphalombe River Gorge, *Chapman JD & Chapman EG 7927* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9103* (FHO).

### *Turraea nilotica* Kotschy & Peyr.

**Shrub** or small, deciduous tree, up to about 4 m high or more. **Flowers** white with no fragrance, usually borne in clusters at the ends of dwarf shoots. **Capsules** green, depressed-globose, 0.6 cm long × 1.0 cm wide, **seeds** black with orange aril.

**Flowering:** March-August. **Fruiting:** September. **Habitat:** Miombo woodland. **Altitude:** c. 1000 m. **Occurrence:** Not common. **Distribution:** From Somalia, Ethiopia and Sudan southwards to South Africa (Transvaal). **Comments:** Flowers when leafless.

**Localities:** Mt. Mulanje (no locality given), *Chapman JD 404* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8743* (FHO). Mchese Mt., above Bwaibwai Forest Village, *Chapman JD & Chapman EG 8854* (FHO).

## MELIANTHACEAE

### *Bersama abyssinica* Fresen. ssp. *abyssinica*

Small, slender **tree**, up to 8 m high. **Leaves** pinnate, glabrous, **rhachis** not winged. **Inflorescence** a long-stalked spike. **Flowers** white with reddish **calyx**. **Capsules**, dehiscent, short-stalked, velvety-hairy, containing red **seeds** with yellow aril.

**Flowering:** April-May, October. **Fruiting:** March, August. **Habitat:** Forest edge or forest understorey. **Altitude:** 600-1650 m. **Occurrence:** Locally common. **Distribution:** Ethiopia to Malawi and Mozambique.

**Localities:** Likabula Valley, below the Cilemba cliffs, *Chapman JD & Chapman EG 7379* (FHO). Likabula Valley, Nasato Stream source below Cilemba, *Chapman JD & Chapman EG 7394* (FHO). Foot of the Chambe cliffs above Mwana Mlanje, *Chapman JD & Chapman EG 7598* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 8901* (FHO). Mchese Mt., Mbawa Valley, *Chapman JD & Chapman EG 9197* (FHO). Chisongeli Forest, Muluzi catchment, *Chapman JD & Chapman EG 9341* (FHO).

### *Bersama abyssinica* Fresen.

ssp. *nyassae* (Baker f.) F.White

Similar to ssp. *abyssinica* but leaf **rhachis** broadly winged, golden hairy on lower **leaf** surface, **calyx** densely covered with golden hairs.

**Fruiting:** May. **Habitat:** Forest edge, *Brachystegia* woodland or rocky open ground. **Altitude:** 950-1350 m. **Distribution:** D.R. Congo, Tanzania, N.E. Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likulezi Valley, *Chapman JD & Chapman EG 7521* (FHO). Phalombe River, *Chapman JD & Chapman EG 7811* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 8877* (FHO).

### *Bersama abyssinica* Fresen.

ssp. *engleriana* (Gürke) F.White

Small, deciduous **tree** similar to ssp. *abyssinica* but leaf **rhachis** narrowly to broadly winged, glabrous on lower **leaf** surface except for some white hairs on midrib, veins, **petiole** and **stem**.

**Habitat:** Rocky ground close to a river. **Altitude:** c. 1000-1100 m. **Occurrence:** Rare. **Distribution:** Nigeria, Ethiopia, Sudan, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Below the west face of Chambe Peak, *Chapman JD & Chapman EG 7101A* (FHO). Phalombe River, at foot of Mt. Mulanje, *Chapman JD & Chapman EG 7806* (FHO).

## MENISPERMACEAE

### *Dioscoreophyllum volkensii* Engl.

Dioecious herbaceous **twiner**. **Stems**, **petioles** and leaf surfaces hairy. **Leaves** tri-lobed, cordate. Male and female **flowers** in long-stalked, axillary spikes. Female flowers mustard-yellow. **Fruits** glabrous.

**Flowering:** November. **Habitat:** Forest and forest edges. **Altitude:** c. 650 m. **Distribution:** From Guinea-Bissau to East Africa, southwards to Mozambique, Zimbabwe and Angola.

**Localities:** Chitakali Stream, near the tea factory, *Chapman JD & Chapman EG 6839* (FHO).

### *Stephania abyssinica* (Quart.-Dill. & A.Rich.) Walp. var. *abyssinica*

Dioecious, herbaceous or semi-woody **twiner**. **Leaves** glabrous, triangular or subcircular, **petiole** inserted about one third up the lamina. Small **flowers** in delicate, axillary **inflorescences**.

**Flowering:** December-February. **Habitat:** Forest or woodland edge. **Altitude:** 850-1850 m. **Distribution:** Widespread in tropical Africa, extending into South Africa (KwaZulu-Natal).

**Localities:** Lichenya Plateau, *Chapman JD 521 & Chapman JD & Tawakali EJ 5546* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9432* (FHO).

### *Tiliacora funifera* (Miers) Oliv.

Dioecious canopy **liane**, with warty lumps evenly spaced along the stem. **Leaves** ovate-lanceolate, papery, glabrous. **Inflorescences** solitary or arranged in false spikes. **Fruits** fleshy, ovoid.

**Habitat:** Forest. **Altitude:** c. 550 m. **Occurrence:** Rare. **Distribution:** Ghana to Ethiopia, East Africa to Mozambique, Zimbabwe and Angola.



**Localities:** Lichenya F.R., Milonde Court, *Chapman JD 6613* (FHO).

*Tinospora caffra* (Miers) Troupin

Dioecious, herbaceous or soft-wooded climber. Leaves heart-shaped, glabrous. Flowers dull orange in lax spikes.

**Flowering:** October-December. **Habitat:** Forest edge. **Altitude:** 650-900 m. **Distribution:** From the Central African Republic to Ethiopia, south to South Africa (KwaZulu-Natal) and Angola.

**Localities:** Above Esperanza, Pamba Stream, *Chapman JD 6677* (FHO). Chitakali, *Chapman JD & Chapman EG 6952* (FHO).

**MOLLUGINACEAE**

Ref. Gilbert, 1987.

*Corrigiola drymarioides* Baker f.

Straggling, glabrous herb forming dense mats. Alternate, subsessile, elliptic to ovate leaves. Flowers small, greenish-white.

**Flowering:** June-September. **Habitat:** Forest edge, pathsides and farm fallows. **Altitude:** 1300-1850 m. **Occurrence:** Locally frequent. **Distribution:** Tanzania, S. Malawi and E. Zimbabwe.

**Localities:** Lichenya path, *Chapman JD & Chapman EG 7270* (MO). Head of the Nandiwo Stream, below Litakala Peak, *Chapman JD & Chapman EG 8599* (FHO). Chisongeli forest, Muluzi Valley, *Chapman JD & Chapman EG 9289* (FHO).

**MONIMIACEAE**

*Xymalos monospora* (Harv.) Baill.

Tree, up to 25 m high. Bark soft and fibrous, shed in small round flakes. Flowers inconspicuous, greenish-yellow. Fruits fleshy, red when ripe, clustered in leaf axils.

**Flowering:** August-September. **Fruiting:** November-May. **Habitat:** Cedar forest. **Altitude:** c. 1800-1900 m. **Occurrence:** Common. **Distribution:** Cameroon, mountains of eastern Africa from the Sudan to the eastern Cape.

**Localities:** Likulezi Valley, *Chapman JD 490* (FHO). At the top of the Mparamata path, Chambe, *Chapman JD 2126* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7950* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8060* (FHO).

**MORACEAE**

Refs. Berg, 1982, 1988, 1989, 1990; Dowsett-lemaire & White, 1990 b; Hijman, 1990.

*Dorstenia cuspidata* A.Rich.

var. *cuspidata* Hijman

Semi-succulent herb up to about 25 cm high.

Annual stems emerge from a discoid tuber. Leaves on lower part of the stem scale-like, upper leaves elliptic with a serrate margin, hairy on both surfaces. Receptacle green, covered with white dots, 4 appendages.

**Flowering:** November. **Habitat:** Rocky, shaded river bank in *Brachystegia* woodland. **Altitude:** c. 900 m. **Distribution:** Senegal to Ethiopia and the Sudan, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, at the river, *Chapman JD & Chapman EG 9418* (FHO).

*Dorstenia psilurus* Welw.

Herb, up to 60 cm high. Unbranched stems leafy in the upper part. Leaves elliptic with denticulate margin, both surfaces hairy. Receptacle light green.

**Flowering:** January. **Habitat:** Forest floor. **Altitude:** c. 1100 m. **Distribution:** Cameroon, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Surani Stream, Ruo Gorge, *Hilliard OM & Burt BL 4640* (K).

*Ficus exasperata* Vahl

Smooth-barked tree, up to 25 m high with low buttresses. Leaves with 3-5 main veins, lamina feels very rough, like sandpaper. Figs solitary or in pairs in leaf axils, 8-15 mm, orange when ripe.

**Fruiting:** October. **Habitat:** Forests and forest margins. **Altitude:** 600-800 m. **Distribution:** Widespread in tropical Africa extending south to Angola and Mozambique.

**Localities:** In Henry Brown's jungle, *Chapman JD 613* (FHO). Entrance to the Crater, just above Lauderdale, *Chapman JD 6591* (FHO). Ruo, near the Ruo River, *Chapman JD & Chapman EG 7478* (FHO).

*Ficus ingens* (Miq.) Miq.

Tree, up to 15 m high with a wide, spreading, low-sweeping crown. Leaves glabrous, coriaceous, spear-shaped, cordate at the base. Figs subsessile, in pairs in leaf axils, pubescent, red when ripe.

**Fruiting:** February, June-July. **Habitat:** *Brachystegia* woodland of the lower slopes, stream-fringing forest/woodland. **Altitude:** 700-1100 m. **Occurrence:** Common. **Distribution:** Widespread in sub-Saharan Africa, extending into South Africa (Cape province) and Namibia. **Comments:** Can also be a strangler or straddle rocks.

**Localities:** Mt. Mulanje, lower slopes (no locality given), *Chapman JD 380* (FHO). Nasato Stream, between Likabula and the Likabula River, *Chapman JD & Chapman EG 7046* (FHO). Likabula River, at the forestry depot, *Chapman JD & Chapman EG 7160* (FHO). Between Chiphalombe and Phalombe Streams, *Chapman JD & Chapman EG 7738* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8645* (FHO). Mchese Mt., Nandiwo valley, *Chapman JD & Chapman EG 9184* (FHO).



***Ficus lutea* Vahl**

Tree, or large strangler, up to 25 m high with a wide, spreading, dense crown and short bole. Leaves shiny, elliptic to oblong, up to 25 cm long. Figs up to 4, sessile in leaf axils, initially enclosed in a white-pubescent bud, up to 2 cm in diameter, yellow when ripe.

**Fruiting:** September-March. **Habitat:** Forest edge. **Altitude:** c. 700 m. **Distribution:** Widespread in sub-Saharan Africa, extending to South Africa (KwaZulu-Natal) and Angola.

**Localities:** Lichenya, *Chapman JD 349* (FHO). Mulanje Mission, *Chapman JD & Chapman EG 6476* (FHO).

***Ficus modesta* F.White**

Usually a small tree, up to about 10 m high, but one of 27 m has been recorded from Mchese Mt. Leaves elliptic to oblong. Figs yellowish with paler spots when ripe, usually borne in pairs on small pegs on the trunk and main branches.

**Fruiting:** April-October. **Habitat:** Forest, forest edge and rocky places; usually near a river. **Altitude:** 850-1200 m. **Occurrence:** Locally common. **Distribution:** S. Malawi. **Comments:** Berg (1988, 1991) considers this species to be *F. ottoniifolia* (Miq.) Miq. ssp. *ulugurensis* (Mildbr. & Burret) C.C.Berg.

**Localities:** Chiphalombe Gorge, *Chapman JD 567* (FHO). Mulosa (Crater) Gorge, above Lauderdale, *Chapman JD & Chapman EG 6534* (FHO). Likabula Valley, below the Cilemba cliffs, *Chapman JD & Chapman EG 7462* (FHO). Below Chambe West Face, *Chapman JD & Chapman EG 7762* (FHO). Nandiwo Stream, Likulezi area, *Chapman JD & Chapman EG 7775* (FHO). Nasato Stream, source below the Cilemba cliff, *Chapman JD & Chapman EG 8124* (FHO). Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8607* (FHO).

***Ficus natalensis* Hochst. ssp. *natalensis***

Tree, up to about 10 m high. Young stems light to reddish-brown. Leaves elliptic to oblong or obovate, glabrous. Figs, 1.5-2.0 cm in diameter when fresh, glabrous, surface very wrinkled when dry, ripening to orange.

**Fruiting:** May-October. **Habitat:** *Brachystegia* woodland or rocky, stream-fringing bush or forest. **Altitude:** 850-1050 m. **Distribution:** Kenya, Uganda and the D.R. Congo to South Africa (KwaZulu-Natal).

**Localities:** Mt. Mulanje, lower slopes (no locality given), *Chapman JD 381* (FHO). Above Esperanza, *Chapman JD 6659* (FHO). Nandiwo valley, Likulezi, *Chapman JD & Chapman EG 7773* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8484* (FHO). Northern foot of Mchese Mt., Nandiwo Stream, *Chapman JD & Chapman EG 8632* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8896* (FHO).

***Ficus scassellatii* Pamp.**

Tree or strangling fig, up to 25 m high. Leaves glabrous, oblong-lanceolate, with conspicuous, fine, reticulate venation. Figs solitary or in pairs,

ellipsoid with a papillate apex, green with yellow-green patches at maturity.

**Fruiting:** July-August. **Habitat:** Mid-altitude and montane forest. **Altitude:** 1400-1650 m. **Distribution:** Somalia to Mozambique.

**Localities:** Chiphalombe River Gorge, *Chapman JD & Chapman EG 7922* (FHO). Mchese Mt., western slopes in the Napolo valley, *Chapman JD & Chapman EG 8713* (FHO).

***Ficus sycomorus* L.**

Briefly deciduous tree, up to about 20 m high. Leaves ovate with a cordate base. Lower surface paler and softly hairy. Figs solitary or occasionally in pairs, borne below the new leaves or on leafless branches, densely hairy.

**Fruiting:** August onwards. **Habitat:** Lower wooded slopes, roadsides. **Altitude:** c. 800 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa, extending into South Africa (KwaZulu-Natal) and Namibia.

**Localities:** Mt. Mulanje, lower slopes (no locality given), *Chapman JD 408* (FHO).

***Ficus thonningii* Blume**

Tree, up to 15 m high or can be epiphytic. Young stems dark brown. Leaves elliptic to oblanceolate or subobovate, glabrous or sparsely white-hairy mainly on the midrib. Figs 5-10 mm in diameter, usually sparsely to densely hairy, smooth to only slightly wrinkled when dry.

**Fruiting:** October-February. **Habitat:** Among rocks beside rivers in forest or other riverine vegetation. **Altitude:** 800-1250 m. **Distribution:** Widespread in tropical Africa, extending into South Africa (Cape Province) and Namibia.

**Localities:** Likabula river near the forestry depot, *Chapman JD & Chapman EG 7169* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 8129* (FHO).

***Ficus vallis-choudae* Delile**

Tree, up to about 25 m high. Leaves ovate to heart-shaped, coriaceous, glabrous, up to 24 cm long and wide. Figs solitary in leaf axils, on short stout peduncles, densely white-hairy, up to 6.0 cm in diameter when mature.

**Fruiting:** July-December. **Habitat:** In stream-fringing forest or woodland. **Altitude:** 650-1200 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa.

**Localities:** Lower and middle slopes all round the mountain, *Chapman JD 407* (FHO). Between Glenorchy and Likabula forestry depot, *Chapman JD & Chapman EG 6966* (FHO). Phalombe River, *Chapman JD & Chapman EG 7832* (FHO).

***Treculia africana* Decne. ssp. *africana*  
var. *africana***

Evergreen tree, up to 27 m high. Bark smooth, grey, fluted at base. Copious latex. Leaves oblong-lanceolate, up to 28 cm long. Fruit globose, orange.



**Fruiting:** October. **Habitat:** Riparian forest. **Altitude:** 550-850 m. **Occurrence:** Common. **Distribution:** From Senegal eastwards to Tanzania, Zambia, Malawi, Mozambique and Angola.

**Localities:** Mnereze Stream, close to its confluence with the upper Thuchila River, near Thuchila Drift, *Chapman JD 441* (FHO). Lichenya F.R. by the Lichenya River at Milonde Court, *Chapman JD 6578* (FHO). Mimosa Tea Research Station, Segregation Plot, *Chapman JD & Chapman EG 8396* (FHO). Nakaye Stream, *Chapman JD & Chapman EG 8638* (FHO).

### *Trilepisium madagascariense* DC.

Evergreen, monoecious tree, up to about 30 m high with a slightly fluted bole. Bark very smooth, with a hint of turquoise. Slash exudes dull yellow latex. Axillary inflorescences, containing male and female flowers. Fruits fleshy, dark purple.

**Flowering:** September-October. **Fruiting:** October-December. **Habitat:** Evergreen forest, often riparian. **Altitude:** 850-1400 m. **Occurrence:** Common. **Distribution:** Fairly widespread in tropical Africa, extending into South Africa (Transvaal) and Angola.

**Localities:** The top boundary of Lauderdale, at the S.W. corner of Mulanje, *Chapman JD 6504* (FHO). Above Esperanza, *Chapman JD & Chapman EG 6700* (FHO). Above Esperanza, along the Mpamba Stream, *Chapman JD & Chapman EG 6700* (FHO). Chitakali Stream, at the Boma Path, *Chapman JD & Chapman EG 6842* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 7888* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8715* (FHO). Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8740* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 8875* (FHO).

## MYRICACEAE

*Refs.* Killick, 1964, 1969; Killick et al. 1998; Polhill & Verdcourt, 2000, in press; White, 1993; White et al. 2001.

### *Morella pilulifera* (Rendle) Killick

Syn. *Myrica pilulifera* Rendle; *Myrica humilis sensu auct. non* Cham. & Schltdl. and *sensu White et al. 2001 pro parte*

Dioecious shrub or small tree, up to 10 m high. Leaves petiolate. Leaf blades generally broadest above the middle, 2-4 times as long as wide, almost equal-sided at the base and usually lacking obvious surface glands. Primary veins 12-18 on either side. Leaf margin usually serrate in the upper half. Male catkins waxy-green tinged with red in bud, female catkins becoming lax with age.

**Flowering:** June-September. **Fruiting:** December, but has been recorded in fruit in May which is unusual (*Chapman & Patel 5686*). **Habitat:** Evergreen forest patches, evergreen thicket, *Brachystegia-Uapaca* woodland, upland grassland and among rocks at high altitude. **Altitude:** 750-2000 m. **Occurrence:** Common and locally abundant. **Distribution:** S. Malawi, Mozambique (Zambézia, Tete & Manica e Sofala

Provinces), Zimbabwe, Swaziland and South Africa (Transvaal, Mpumalanga, KwaZulu-Natal, E. Cape Province). **Comments:** White *et al.* (2001) recognised *Myrica pilulifera* Rendle as a synonym of *Myrica humilis* Cham. & Schltdl., but Polhill & Verdcourt (in press) consider *Myrica pilulifera* to be a synonym of *Morella pilulifera* and distinct from *Morella humilis* (Cham. & Schltdl.) Killick [syn. *Myrica humilis* Cham. & Schltdl.].

**Localities:** Head of Likulezi Valley, *Chapman JD 419* (FHO). On the path from Likabula to Lichenya, just past Breakfast Rock, *Chapman JD 5869* (FHO). West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6893* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7007* (FHO). Likulezi-Thuchila Shelf, *Chapman JD & Chapman EG 7791* (FHO). Entrance to the Phalombe Gorge, *Chapman JD & Chapman EG 7817* (FHO). Lauderdale, *Chapman JD & Chapman EG 8411* (FHO). Western slopes of Mchese Mt., *Chapman JD & Chapman EG 8575* (FHO). Malilima Valley, *Chapman JD & Chapman EG 9534* (FHO). Thuchila Hut, *Chapman JD & Patel IH 5686* (FHO).

### *Morella serrata* (Lam.) Killick

Syn. *Myrica serrata* Lam.; *Myrica confiera auct. non* Burm.f.

Dioecious shrub or small tree, up to about 9 m high. Leaf blades long-attenuate at the base with the limit of the petiole not clearly demarcated, narrower than in *M. pilulifera* (4-8 times as long as wide) and densely covered with glands on both surfaces (pock-marked when glands wither). Primary veins 20-30 or more on either side. Leaf margin entire to serrated in upper half. Male catkins reddish or purplish-brown when young, female catkins elongate as they mature.

**Flowering:** August. **Habitat:** River banks **Altitude:** c. 750 m. **Distribution:** From S. Tanzania to South Africa (W. Cape) and Angola.

**Localities:** Mulosa River, at the drift between Mozambique Milanje and Fort Lister, *Chapman JD 630* (FHO).

## MYROTHAMNACEAE

### *Myrothamnus flabellifolius* Welw.

Low, much-branched shrub, up to about 90 cm high. Branches tetragonous, slightly winged, bark longitudinally striated. Leaves congested on short lateral branches, elliptic with a wedge-shaped apex. Flowers small, in sessile, terminal, erect, catkin-like inflorescences.

**Flowering:** November. **Habitat:** In crevices on smooth, rock sheets. **Altitude:** 1250-2400 m. **Occurrence:** Not common. **Distribution:** D.R. Congo (Katanga), Kenya, Uganda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal, Cape Province), Lesotho, Angola and Namibia.

**Localities:** Cilemba Peak, *Chapman JD 6061* (FHO). Chitakali Stream (West branch), *Chapman JD & Chapman EG 6896* (FHO).



## MYRSINACEAE

### *Embelia schimperi* Vatke

Dioecious liane, reaching up to 15 m and climbing by means of persistent, lateral short shoots. Leaves elliptic to obovate, glabrous. Flowers in many-flowered inflorescences at the ends of short lateral shoots along with the leaves.

**Fructing:** June. **Habitat:** Forest. **Altitude:** 1150-1200 m. **Distribution:** Scattered in West Africa and Angola; on the eastern side of Africa from Ethiopia, through E. D.R. Congo and East Africa, to Zimbabwe.

**Localities:** Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7338* (FHO). Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8611* (FHO).

### *Maesa lanceolata* Forssk. ssp. *lanceolata*

Shrub or small tree, up to about 7 m high. Leaves elliptic to broadly lanceolate, margin varies from slightly to distinctly serrated. Flowers small, white.

**Flowering:** December-January. **Fructing:** May, October. **Habitat:** Forest edge, rocky river banks, the plateaux. **Altitude:** 850-2000 m. **Occurrence:** Common. **Distribution:** Mountains of Guinea to Cameroon in West Africa and in eastern Africa from Ethiopia to South Africa (E. Cape).

**Localities:** Likulezi Valley, *Chapman JD 458* (FHO). Chambe Saddle to Lichenya, *Chapman JD 5642* (FHO). Linji Plateau (north end of Lichenya Plateau), *Chapman JD 6050* (FHO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 7072* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8493* (FHO).

### *Myrsine africana* L.

Dioecious shrub, up to about 3 m high. Leaves small, shiny, elliptic to obovate, crowded on stem. Flowers tiny, greenish-cream. Fruits globose, ripening purplish-black.

**Flowering:** August-September. **Fructing:** February-May. **Habitat:** Forest edge, shrubberies in upland grassland. **Altitude:** 1500-2000 m. **Occurrence:** Common. **Distribution:** From Ethiopia and Sudan to the Cape Peninsula.

**Localities:** Over most of the mountain, *Chapman JD 423* (FHO). Lichenya Plateau, near the forestry hut, *Chapman JD 5648* (FHO). Where the Boma Path crosses the west branch of the Chitakali Stream, *Chapman JD & Chapman EG 6872* (FHO). Likabula to Lichenya Plateau path, *Chapman JD & Chapman EG 8013* (FHO).

### *Rapanea melanophloeos* (L.) Mez

Evergreen tree, up to 27 m high but often smaller, with an upright habit and pyramidal branching pattern. Leaves glabrous, elliptic, clustered at the ends of the branches. Flowers small, greenish-yellow. Fruits ripening purple.

**Flowering:** December-February. **Fructing:** May, October. **Habitat:** Usually at the edge of evergreen forest, sometimes inside the forest. **Altitude:** 1350-2350 m. **Distribution:** Widespread in the mountains of tropical Africa and southern Africa.

**Localities:** Likulezi Valley, *Chapman JD 481* (FHO). Lichenya Plateau, *Chapman JD 519* (FHO). Near Lichenya Hut, *Chapman JD 5599* (FHO). West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6890* (FHO). Lichenya Plateau, Boma Cottage, *Chapman JD & Chapman EG 7006* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 7654* (FHO). Slopes to the West Peak above the Lichenya-Chambe path, *Chapman JD & Chapman EG 8155* (FHO). Chisongeli forest (West), *Chapman JD & Chapman EG 9337* (FHO).

## MYRTACEAE

*Ref. White, 1977.*

### *Eugenia capensis* (Eckl. & Zeyh.) Sond.

ssp. *nyassensis* (Engl.) F.White

Tree, up to 15 m high. Leaves elliptic, broadest near the middle, gland-dotted below, with a spicy fragrance when crushed. Flowers white, slightly scented.

**Flowering:** October. **Habitat:** Montane forest and forest edge. **Altitude:** 900-1700 m. **Distribution:** Tanzania to Mozambique and Zimbabwe.

**Localities:** Mulosa Gorge (to the Crater), *Chapman JD 6570* (FHO). Above Esperanza, along the Pamba Stream (Nakholu, west branch), *Chapman JD & Chapman EG 6691* (FHO). Ruu Gorge, *Chapman JD & Chapman EG 8338* (FHO). Mchese Mt., western slopes in the Napolo Valley, *Chapman JD & Chapman EG 8703* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8738* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9154* (FHO). Chisongeli Forest, Muluzi catchment, *Chapman JD & Chapman EG 9319* (FHO).

### *Eugenia capensis* (Eckl. & Zeyh.) Sond. *rheotypic variant*.

Shrub, up to 5 m high. Leaves narrowly elliptic. Flowers white, highly scented.

**Flowering:** October. **Habitat:** Flood-swept banks of the Ruu River in riparian forest. **Altitude:** c. 700-900 m. **Occurrence:** Occasional. **Distribution:** Known only from Mt. Mulanje. **Comments:** This variant is described in White *et al.* (2001) but not given taxonomic recognition.

**Localities:** Ruu Gorge, at the Lujeri Power Station, *Chapman JD & White F 8446* (FHO). Ruu Gorge, *Johnston-Stewart NGB 155* (FHO).

### *Syzygium cordatum* Hochst. ex Krauss

Evergreen tree, up to about 15 m high. Young stems quadrangular, slightly winged. Foliage dense and slightly glaucous. Leaves oblong-elliptic to suborbicular, cordate base. Flowers cream. Fruits urceolate, ripening purple.



**Flowering:** June, November. **Fruiting:** August, October. **Habitat:** Riparian forest. **Altitude:** 700-1950 m. **Occurrence:** Common stream-bank tree. **Distribution:** From Uganda and the D.R. Congo southwards to South Africa (E. Cape) and Angola. **Comments:** Fruits edible.

**Localities:** Lauderdale, banks of the Little Mulosa River below the Crater, *Chapman JD 6641* (FHO). Where the Nakolu Stream emerges from the gorge above Lauderdale, *Chapman JD & Chapman EG 6762* (FHO). Likulezi River, just below the gorge, *Chapman JD & Chapman EG 7704* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8204* (FHO). Mchese Mt., along the Namajani Stream, *Chapman JD & Chapman EG 8822* (FHO).

### *Syzygium cordatum* × *guineense*

Tree, up to 20 m high. Young stems slightly winged. Leaves lanceolate-elliptic, base cordate or broadly rounded. Fruits, fleshy, purple.

**Fruiting:** December. **Habitat:** Mid-stratum of stream-fringing forest. **Altitude:** 650-950 m. **Occurrence:** Common. **Distribution:** Scattered throughout the range of *Syzygium cordatum*.

**Localities:** Between Glenorchy & Likabula forestry depot, *Chapman JD & Chapman EG 6969* (FHO). Northern foot of Mchese Mt., along the Nandiwo Stream, *Chapman JD & Chapman EG 8626* (FHO).

### *Syzygium guineense* (Willd.) DC.

ssp. *afromontanum* F.White

Evergreen tree, up to 27 m high. Leaves elliptic with a long acumen. Fruit subglobose, purplish-black.

**Flowering:** June-November. **Fruiting:** June-December. **Habitat:** Forest and forest edge. **Altitude:** 700-1700 m. **Distribution:** Sudan and Ethiopia to Zimbabwe, Mozambique and Angola. **Comments:** The fruits are edible.

**Localities:** Lichenya path, *Chapman JD 335* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6846* (FHO). Foot of the west face of Chambe Peak, *Chapman JD & Chapman EG 7094* (FHO). Likabula Valley, at the source of the Nasato Stream, *Chapman JD & Chapman EG 7317* (FHO). Just above the Likulezi River Gorge, *Chapman JD & Chapman EG 7702* (FHO). Phalombe River, below the gorge, *Chapman JD & Chapman EG 7843* (FHO). Mchese Mt., below the dome on the western side, *Chapman JD & Chapman EG 8580* (FHO). Chisongeli (West) Forest, *Chapman JD & Chapman EG 9303* (FHO).

### *Syzygium guineense* (Willd.) DC.

ssp. *guineense*

Small evergreen tree, up to 11 m high. Leaf apex obtuse or broadly acuminate. Fruit ellipsoid to pear-shaped, ripening purple.

**Fruiting:** August. **Habitat:** Savanna woodland or fringing forest. **Altitude:** c. 1000 m. **Occurrence:** Locally abundant. **Distribution:** Senegal, Ethiopia to South Africa and Angola. **Comments:** Fruits edible.

**Localities:** On Boma Path, *Chapman JD & Chapman EG 6809* (FHO). Mchese Mt., low down the western slopes, *Chapman JD & Chapman EG 8820* (FHO).

### *Syzygium owariense* (P.Beauv.) Benth.

Evergreen tree, up to 30 m high. Roots usually with knee-shaped pneumatophores. Leaves broadest near the base, not cordate but broadly rounded to broadly cuneate.

**Flowering:** September. **Habitat:** Stream-side tree in forest. **Altitude:** c. 1100-1250 m. **Distribution:** From Sierra Leone to Uganda, southwards to Mozambique and Zimbabwe.

**Localities:** Likulezi Stream, *Chapman JD 430* (FHO). Below Cilemba, well up the Nasato Stream, *Chapman JD & Chapman EG 7149* (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7461* (FHO). Likulezi River, just above the gorge, *Chapman JD & Chapman EG 7701* (FHO).

## OCHNACEAE

### *Brackenridgea zanguebarica* Oliv.

Deciduous shrub or small tree, up to 7 m high.

Leaves very shortly petiolate, elliptic to obovate, finely serrated. Flowers white, fragrant.

**Flowering:** October. **Fruiting:** December. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1000 m. **Distribution:** E. Kenya and Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Between Likulezi & Phalombe Rivers, *Chapman JD 506* (FHO). Lower slopes of Mchese Mt., above the Fort Lister Gap, *Chapman JD & Chapman EG 8912* (FHO). Mchese Mt., Nampende Stream, *Chapman JD & Chapman EG 9157* (FHO).

### *Ochna gambleoides* N.Robson

Small tree, up to 7 m high. Leaves glaucous, oblong elliptic to obovate, margin serrated. Sepals orange-red, envelope the fruit. Leaves and fruits larger than in other *Ochna* species.

**Fruiting:** October. **Habitat:** Rocky slopes and *Brachystegia* woodland. **Altitude:** 950-1250 m. **Occurrence:** Rare. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Thuchila area, *Chapman JD 467* (FHO). Below the West Face of Chambe Peak, *Chapman JD & Chapman EG 7097* (FHO). Western slopes of Mchese Mt., Namajani Valley, *Chapman JD & Chapman EG 8613* (FHO).

### *Ochna holstii* Engl.

Briefly deciduous tree, up to 27 m high but often smaller. Leaves elliptic, margin densely curved-serrate. Flowers yellow, fragrant. Sepals reddish; flat and spreading in fruit.

**Flowering:** October-November. **Fruiting:** November. **Habitat:** Forest, often riverine forest. **Altitude:** 900-1850 m. **Occurrence:** Common. **Distribution:** Ethiopia and Sudan to South Africa (E. Cape). **Comments:** Leaves fall in September, new leaves appear in October.

**Localities:** Likulezi River, at the junction with the Ng'ono, *Chapman JD 454* (FHO). Well up the gorge into the Lauderdale Crater forest, *Chapman JD 6495* (FHO). Boma



Path, *Chapman JD & Chapman EG 6859* (FHO). Above the site of the old Boma Hut, *Chapman JD & Chapman EG 8186* (FHO). Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8615* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8674* (FHO). Approaching Chambe West Face Shelf, *Chapman JD & Chapman EG 8971* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9155* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9329* (FHO). Big Ruvo Valley, *Chapman JD & Chapman EG 9385* (FHO).

### *Ochna macrocalyx* Oliv.

Dwarf shrub, up to 2 m but usually much smaller. Leaves oblanceolate, margin densely serrulate. Flowers yellow. Sepals becoming red, long and spreading in fruit.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Local. **Distribution:** From Tanzania to Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8936* (FHO).

### *Ochna polyneura* Gilg

Tree, up to 8 m high with pale grey bark. Young stems reddish. Leaves obovate and shortly acuminate, margin finely serrated, reddish-tinged. Flowers yellow. Sepals red in fruit.

**Flowering:** November. **Fruiting:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850-950 m. **Occurrence:** Locally common. **Distribution:** S.E. Tanzania, Malawi, Mozambique and E. Zimbabwe. **Comments:** Flowers appear with the new leaves.

**Localities:** Likulezi River Bank, *Chapman JD & Chapman EG 7431* (FHO). Low down the Likabula Valley, *Chapman JD & Chapman EG 8926* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9416* (FHO).

### *Ochna schweinfurthiana* F.Hoffm.

Deciduous, small tree, up to 7 m high. Leaves oblanceolate, narrowing into the petiole. Flowers yellow. Sepals brick-red in fruit.

**Flowering:** October. **Fruiting:** September-November. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1100 m. **Occurrence:** Common. **Distribution:** Fairly widespread in tropical Africa.

**Localities:** Between Likabula and Thuchila, *Chapman JD 435* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 8127* (FHO). Western foot of Mchese Mt. above the Phalombe-Fort Lister road, *Chapman JD & Chapman EG 8899* (FHO). Foot of Likabula Valley, *Chapman JD & Chapman EG 9422* (FHO).

### *Ochna* sp.

Tree, up to 20 m high. Small branchlets not slender, branching at right angles or nearly so. Bark dark grey-brown, with white lenticels, not peeling. Leaves elliptic to oblanceolate, up to 16 cm long, margin crenate-serrate to the base, very shortly petiolate.

**Habitat:** Amongst rocks in *Brachystegia* woodland or at the foot of a cliff in full sun. **Altitude:** 900-1500 m. **Comments:** These sterile specimens are similar to *O. mossambicensis* but differ in their ecology.

**Localities:** Below Litakala, above the Fort Lister Gap, *Chapman JD & Chapman EG 8651* (FHO). In the Namitambo Valley, below the rim of Chambe Plateau, *Chapman JD & Chapman EG 9548* (FHO).

## OLACACEAE

### *Olax dissitiflora* Oliv.

Small, graceful tree, up to about 8 m high. Leaves dull green, elliptic-lanceolate. Flowers small, white, produced in abundance. Fruits red when ripe, ovoid, crowned with the persistent base of the style.

**Flowering:** October. **Fruiting:** January. **Habitat:** *Brachystegia* woodland. **Altitude:** 750-900 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and South Africa (Transvaal).

**Localities:** Mchese Mt., between Nampende and Nandiwo Streams, *Chapman JD 615* (FHO). Below Cilemba, *Chapman JD & Chapman EG 7142* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8895* (FHO).

### *Olax obtusifolia* De Wild.

Deciduous, small tree, up to about 4 m high. Leaves dull green, ovate-lanceolate, with a very short petiole (no more than 2 mm). Flowers white, on short pedicels (1-2 mm). Fruit yellow-orange.

**Flowering:** October. **Fruiting:** From December. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 950 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Zambia, Malawi, Mozambique and Zimbabwe. **Comments:** Flowers appear in October at the same time as the leaves, after a leafless period of 2-3 months.

**Localities:** Likulezi River area, *Chapman JD 503* (FHO). Mchese Mt., low on western slopes above Bwaibwai Forest Village, *Chapman JD & Chapman EG 8919* (FHO).

### *Strombosia scheffleri* Engl.

Tree, up to 30 m high. Bark flaking to leave pale patches. Leaves oblong. Flowers greenish.

**Habitat:** Forest. **Altitude:** c. 850-900 m. **Occurrence:** Common. **Distribution:** S.E. Nigeria, Cameroon, Uganda and the D.R. Congo to Mozambique, Zimbabwe and Angola. **Localities:** Mulosa Gorge, just above the Boma water intake at the entrance to Lauderdale Crater, *Chapman JD 6510* (FHO). Mulosa Stream, entrance to the Lauderdale Crater, *Chapman JD 6557* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6725 & 6745* (FHO).

### *Ximenia caffra* Sond. var. *natalensis* Sond.

Small, spiny tree, up to 8 m high. Leaves elliptic, glabrous. Flowers greenish-cream, thickly hairy



at the throat. Fruit ovoid, up to 2.5 cm long, pendant, red when ripe.

**Flowering:** October. **Fruiting:** January. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1000 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and South Africa. **Comments:** The fruits are edible.

**Localities:** Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 7071* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8897* (FHO).

## OLEACEAE

*Refs.* Dowsett-Lemaire & White, 1990 d; Friis, 1992; Green & Kupicha, 1979; Green & Wickens, 1989; White, 1990.

### *Chionanthus battiscombei* (Hutch.) Stearn

Tree, up to 25 m high. Branchlets pale grey. Leaves elliptic, dark green and glossy above, paler below, acrodomatia present. Flowers white, in sessile axillary clusters. Fruits ellipsoid, purplish-black when ripe.

**Flowering:** October-November. **Fruiting:** October-March.

**Habitat:** Forest and forest edge. **Altitude:** 550-1800 m.

**Distribution:** Kenya to South Africa (N. Transvaal).

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD 6632* (FHO). Lichenya F.R., T.A. Mabuka's, *Chapman JD & Chapman EG 7128* (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7312* (FHO). Chisongeli Forest (West), *Chapman JD & Chapman EG 9295* (FHO). Lichenya Plateau, Nessa Path Forest, *Chapman JD & Chapman EG 9450* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 9503* (FHO). Namitamba Valley, low down the western slopes of Chambe, *Chapman JD & Chapman EG 9557A* (FHO).

### *Jasminum brachyscyphum* Baker

Scrambling shrub or liane. Leaves broadly ovate to rounded triangular, pits in leaf axils absent. Flowers white, very fragrant, purple in bud. Calyx lobes filiform. Fruits ellipsoid, in pairs, ripening to dark purple.

**Flowering:** October-November. **Fruiting:** November-December. **Habitat:** Forest edge, rocky river banks. **Altitude:** 1250-1800 m. **Occurrence:** Common. **Distribution:** Malawi (Mt. Mulanje), Mozambique and Zimbabwe.

**Localities:** Likulezi Valley, *Chapman JD 460* (FHO). West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6884* (FHO). East Chitakali Stream, *Chapman JD & Chapman EG 6901* (FHO). Likabula Valley, on the Lichenya path, *Chapman JD & Chapman EG 6997* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 8128* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8195* (FHO). Approach to Chambe West Face Shelf, *Chapman JD & Chapman EG 8980* (FHO).

### *Jasminum pauciflorum* Benth.

Scrambling or climbing shrub. Leaves oblong-ovate, papery when dry, pits in leaf axils present.

Flowers white. Fruits small and globose, black when ripe.

**Fruiting:** October. **Habitat:** Forest edge. **Altitude:** c. 800 m.

**Distribution:** Widespread in tropical Africa, as far south as Malawi.

**Localities:** Nakolu Stream, just above Lauderdale, *Chapman JD & Chapman EG 6719* (FHO).

### *Olea capensis* L.

Tree, up to 27 m or more, with a slender bole.

Leaves elliptic, acuminate, glabrous. Flowers white, remaining in bud for a prolonged period.

Fruits ellipsoid, ripening reddish-purple.

**Flowering:** November-June. **Fruiting:** November-January.

**Habitat:** Forest. **Altitude:** 1200-1800 m. **Occurrence:** Common. **Distribution:** Widespread in tropical and southern Africa.

**Localities:** Likabula Valley, Chapaluka Stream crossing, *Chapman JD & Chapman EG 7112* (FHO). Likabula Valley, Nasato Stream source, below Cilemba, *Chapman JD & Chapman EG 7456* (FHO). Phalombe River Gorge, *Chapman JD & Chapman EG 7991* (FHO). Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG 8189* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8975* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9083* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9253* (FHO). Big Ruu Valley, *Chapman JD & Chapman EG 9394* (FHO). Namitambo Valley, below the rim of the Chambe basin, *Chapman JD & Chapman EG 9549* (FHO).

### *Olea europaea* L.

ssp. *cuspidata* (Wall. ex DC.) Cif.

Syn. *Olea africana* Mill.; *O. europaea* ssp. *africana* (Mill.) Green

Shrub or tree, up to about 12 m high, often less.

Leaves narrowly elliptic, glossy dark green above, metallic appearance below. Flowers white, sweet-scented in terminal and lateral inflorescences. Fruits ellipsoid.

**Fruiting:** May. **Habitat:** Forest. **Altitude:** c. 2000 m. **Distribution:** Widespread in eastern Africa from Ethiopia to South Africa (Cape)

**Localities:** Sombani Basin, *Chapman JD & Patel IH 5709* (FHO).

### *Schrebera alata* (Hochst.) Welw.

Tree, to 15 m or more high. Leaves pinnate, petiole and rachis often winged. Flowers white, very fragrant. Fruit a woody, bivalved, club-shaped capsule, brown with a wrinkled surface.

**Flowering:** February. **Fruiting:** January, September.

**Habitat:** Forest. **Altitude:** 1200-1850 m. **Distribution:** From Ethiopia to South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Likabula Valley, *Chapman JD 517* (FHO). Where the Boma Path crosses the West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6873* (FHO). Foot of Chambe West Face, *Chapman JD & Chapman EG 7093* (FHO). Above Limbuli, *Chapman JD & Chapman EG 9275* (FHO).



*Schrebera trichoclada* Welw.

Tree, up to about 13 m high, with a rounded crown and drooping branches. Leaves simple. Flowers cream. Fruit a woody, bivalved, pear-shaped capsule, pale yellow-brown and warty.

**Fruiting:** May-June. **Habitat:** Edge of stream-fringing woodland or forest, rocky hillsides. **Altitude:** c. 900 m. **Occurrence:** Fairly common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Angola.

**Localities:** Likulezi Catechist Centre, Phalombe, *Chapman JD & Chapman EG 7541* (FHO). Northern foot of Mchese Mt., along the Nandiwo Stream, *Chapman JD & Chapman EG 8623* (FHO). Mchese Mt., Nabwato Stream, *Chapman JD & Chapman EG 9115* (FHO).

## OLINIACEAE

*Olinia rochetiana* A.Juss.

Deciduous shrub or tree, up to 20 m high. Leaves elliptic to almost diamond-shaped, pale beneath with the close, reticulate venation darker. Flowers mid-pink, sweetly scented. Fruit dull crimson, ovoid.

**Flowering:** November-December. **Fruiting:** May. **Habitat:** Forest and forest edge, shrubberies. **Altitude:** 1500-2350 m. **Distribution:** From Ethiopia to South Africa (Transvaal) and Angola. **Comments:** New leaves appear in October.

**Localities:** Likabula Valley, Lichenya Path, *Chapman JD & Chapman EG 6994* (FHO). Thuchila Shelf, at Chisepu, *Chapman JD & Chapman EG 7587* (FHO). West Peak, above the Lichenya-Chambe path, *Chapman JD & Chapman EG 8156* (FHO). Lichenya Plateau (site of the destroyed hut), *Chapman JD & Chapman EG 8177* (FHO). Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG 8885* (FHO).

## ONAGRACEAE

*Epilobium salignum* Hausskn.

Perennial herb, up to 80 cm or more. Leaves narrowly elliptic. Flowers white, becoming pink after pollination. Stigma not cleft.

**Flowering:** March. **Fruiting:** March. **Habitat:** Wet sandy soil in stream channel. **Altitude:** c. 2000 m. **Distribution:** Cameroon, E. D.R. Congo and S. Uganda to South Africa (E. Cape Province) and Angola.

**Localities:** Sombani Basin, *Chapman JD & Chapman EG 8362* (MO).

## OPILIACEAE

Ref. Dowsett-Lemaire & White, 1990 e.

*Opilia amentacea* Roxb.

Scrambling shrub or woody climber; reaching 15 m. Leaves elliptic to lanceolate, acute or

acuminate. Flowers yellowish-green in erect, catkin-like inflorescences. Fruits ellipsoid, pale orange.

**Flowering:** October. **Fruiting:** November. **Habitat:** Stream-fringing forest. **Altitude:** 850-1200 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Mchese Mt., Namajani Valley, *Chapman JD & Chapman EG 8604* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8894* (FHO).

## ORCHIDACEAE

Refs. Cribb, 1979; la Croix et al., 1991; Linder & Kurzweil, 1999, Morris, 1970.

*Acampe pachyglossa* Rchb.f.

Robust, epiphytic herb, usually forming large clumps. Woody stem, up to 50 cm long. Inflorescence arising in leaf axils, up to 20 cm long. Flowers creamy-yellow blotched with reddish-brown, fleshy, scented.

**Flowering:** Sporadic, often June-July but also January-February. **Habitat:** Woodland. **Altitude:** c. 600 m. **Distribution:** Fairly widespread from the D.R. Congo eastwards and southwards to South Africa, as well as islands in the Indian Ocean.

**Localities:** Esperanza, *Morris B 67* (K).

*Aerangis appendiculata* (De Wild.) Schltr.

Epiphytic or lithophytic herb. 3-4 dark green leaves with conspicuous reticulate venation, up to 8 cm long. Inflorescence pendant, up to 14 cm long. Flowers greenish-white.

**Flowering:** November-December. **Habitat:** On vertical rock face by the river. **Altitude:** c. 800 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula, *Chapman JD & Chapman EG 7441* (MO).

*Aerangis distincta* J.L.Stewart & la Croix

Epiphytic herb. Leaves lying in one plane, obtriangular, deeply 2-lobed at apex. Inflorescences pendant from lower leaf axils, flowers white, tinged with pink near the apex.

**Flowering:** January. **Habitat:** Low down on trunks and branches in riverine forest. **Altitude:** c. 1100 m. **Distribution:** Malawian endemic.

**Localities:** Along the Nasato Stream below Cilemba, *Chapman JD & Chapman EG 7158* (E).

*Aerangis mystacidii* (Rchb.f.) Schltr.

Epiphytic herb, up to 30 cm long when flowering. Inflorescence pendant, flowers white with a long spur tinged with pink.

**Flowering:** March-April. **Habitat:** Woodland. **Altitude:** 600-850 m. **Occurrence:** Sporadic. **Distribution:** S. Tanzania, Zambia, Malawi, Zimbabwe, Mozambique, Swaziland and South Africa (KwaZulu-Natal, Cape).



**Localities:** Mimosa Tea Research Station, *Chapman JD & Chapman EG 8379* (FHO). Mimosa, *la Croix I 136* (K). Likabula, *Morris B 1A* (K).

*Aerangis splendida* J.L.Stewart & la Croix

Epiphytic herb, up to 30 cm long when flowering. Large spatulate leaves. Flowers white.

**Flowering:** January-May. **Habitat:** Low down on tree trunks and lianes in riverine forest in deep shade. **Altitude:** c. 1100 m. **Distribution:** Zambia and S. Malawi.

**Localities:** Along Nakolu Stream near its source, *Chapman JD & Chapman EG 6792* (FHO). Ruo Gorge, *la Croix I & Spurrier M 681* (K).

*Angraecopsis amaniensis* Summerh.

Dwarf, epiphytic herb, up to 7 cm long when flowering. 2-4 rather fleshy leaves. Flowers small, greenish-cream, fragrant at night.

**Flowering:** March. **Habitat:** Lithophytic forest. **Altitude:** c. 1200 m. **Occurrence:** Locally common. **Distribution:** Kenya, Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Likabula Valley, Nasato Stream source below Cilemba cliffs, *Chapman JD & Chapman EG 7393* (K).

*Angraecopsis malawiensis* P.J.Cribb

Dwarf, epiphytic herb, up to 5 cm long. Inflorescence laxly 4-12-flowered, flowers green or yellow-green.

**Flowering:** Usually March-April but sometimes September, October or January. **Habitat:** On mossy branches in evergreen forest. **Altitude:** c. 1800 m. **Distribution:** Tanzania and Malawi.

**Localities:** Little Ruo Plateau, *Morris B 4* (K).

*Angraecopsis parviflora* (Thouars) Schltr.

Epiphytic and lithophytic herb, up to 30 cm long with narrow, falcate, pendant leaves. Flowers white.

**Flowering:** February-April. **Fruiting:** August. **Habitat:** Low down on tree trunks and rock faces in riverine, evergreen forest. **Altitude:** 1050-1350 m. **Occurrence:** Common. **Distribution:** Cameroon, Tanzania, Malawi, Mozambique, Madagascar, Mauritius and Reunion.

**Localities:** Source of Nakolu River, *Chapman JD & Chapman EG 6793* (FHO). Chiphalombe River, *Chapman JD & Chapman EG 7906* (MO). Ruo Gorge, *Chapman JD & Chapman EG 8337* (MO). Little Lichenya River, above Mini-Mini, *Chapman JD & Chapman EG 8350* (MO).

*Angraecum chamaeanthus* Schltr.

Tiny epiphytic herb. Inflorescence 1-3 cm long, flowers white.

**Flowering:** December. **Habitat:** Evergreen forest. **Altitude:** c. 2000 m. **Distribution:** Malawi, Mozambique (Chimanimani Mts.) and E. Zimbabwe. **Comments:** Chapman recorded this species as occurring on *Pittosporum viridiflorum*.

**Localities:** Linji (Lichenya) Plateau, C.C.A.P. cottage, *Chapman JD & Chapman EG 6981 & 6981B* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8301* (MO).

*Angraecum conchiferum* Lindl.

Epiphytic herb, up to 60 cm long. Base of stem covered in old leaf sheaths, black-dotted. Inflorescences 1-2-flowered. Flowers white, lip very concave, sub-orbicular with an apiculum, musky sweet odour.

**Flowering:** September-October. **Habitat:** Montane forest. **Altitude:** c. 1800-1900 m. **Distribution:** Kenya, Tanzania, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Lichenya Plateau, *Jenkins P 41* (K). Sombani Plateau, *Morris B 54* (FHO). Lichenya Plateau, *Pawek J 3883* (K).

*Angraecum sacciferum* Lindl.

Dwarf, epiphytic herb, up to 2 cm long. Inflorescences 1-several, arising below the leaves, on thread-like peduncles. Flowers greenish-yellow.

**Flowering:** January-May. **Habitat:** Montane forest. **Altitude:** c. 1800 m. **Distribution:** Cameroon, D.R. Congo through East Africa to the *Flora Zambesiaca* area, Swaziland and South Africa (KwaZulu-Natal).

**Localities:** Lichenya Plateau, *Jenkins P 24* (K).

*Bolusiella iridifolia* (Rolfe) Schltr.

ssp. *picea* P.J.Cribb

Dwarf, epiphytic herb, up to 3 cm long. Leaves fleshy with a groove on the upper surface, bilaterally flattened, forming a fan. Inflorescences 1-2 per plant, each up to 12-flowered. Flowers white with conspicuous black bracts.

**Flowering:** February-April. **Habitat:** Montane evergreen forest. **Altitude:** 1800-2000 m. **Distribution:** Kenya, Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Sombani Plateau, *Morris B 48* (K). Chambe Plateau, *Morris B 342* (K, MAL).

*Brachycorythis pleistophylla* Rchb.f.

Terrestrial herb, up to 100 cm high. Stem very leafy. Flowers purple, yellow in the throat.

**Flowering:** November-January. **Habitat:** Grassland and edge of woodland. **Distribution:** Widespread in tropical Africa.

**Localities:** Mt. Mulanje, no further locality given, *Whyte A s.n.* (BM).

*Brownlea maculata* P.J.Cribb

Terrestrial or epiphytic herb, up to 35 cm high when flowering. Flowers lilac with purple spots.

**Flowering:** March-May. **Habitat:** In deep shade in woodland and evergreen forest. **Altitude:** 1200-2000 m. **Occurrence:** Frequent. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya Plateau, at Linji cottage, *Chapman JD & Chapman EG 8504* (FHO). Savani River, *Johnston-Stewart NGB 397* (K). Ruo Gorge, *la Croix I 484* (K).



***Brownlea mulanjiensis* H.P.Linder**

Erect, terrestrial herb, up to 50 cm high. Inflorescence a 12-many flowered, dense spike. Flowers lilac.

**Flowering:** February-March. **Habitat:** Montane grassland and rocky heathland. **Altitude:** 2200-2450 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Chinzama, *Johnston-Stewart* NGB 478 (K). Sapitwa, *Morris B* 744 (K).

***Brownlea parviflora* Harv.**

Terrestrial herb, up to 60 cm high. Inflorescence a many-flowered dense spike. Flowers lilac.

**Flowering:** March-April. **Habitat:** Montane grassland. **Altitude:** 1200-2050 m. **Occurrence:** Plentiful. **Distribution:** Cameroon, Kenya, Tanzania, Zambia (Nyika), Malawi, Mozambique, E. Zimbabwe, South Africa (Transvaal to the Cape) and Madagascar.

**Localities:** Chambe Plateau, *Jenkins P* 116 (K). Lichenya Plateau, *la Croix I et al.* 454 (K).

***Bulbophyllum elliotii* Rolfe**

Epiphytic herb with small, fleshy leaves, up to 4 cm long. Inflorescence pendulous, up to 15 cm long, rhachis fleshy, purplish and many flowered. Flowers green spotted with purple and papillose on the outside.

**Flowering:** Erratic. **Habitat:** *Brachystegia-Uapaca* woodland. **Altitude:** 800-1400 m. **Distribution:** D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Zimbabwe, South Africa (Transvaal) and Madagascar.

**Localities:** Likulezi Valley, at the Likulezi Ng'ono Stream above the waterfall, *Chapman JD & Chapman EG* 7535 (MO). Limbuli, *Morris B* 46 (K). Likabula, *Morris B* 58 (K).

***Bulbophyllum fuscum* Lindl.**

var. *melinostachyum* (Schltr.) J.J.Verm.

Epiphytic or lithophytic herb, up to 10 cm high when flowering. Flowers yellow-green to orange, lip orange to vermilion red.

**Flowering:** February-April. **Habitat:** Riverine forest and woodland. **Altitude:** c. 900 m. **Occurrence:** Common.

**Distribution:** Widespread in tropical Africa.

**Localities:** Likabula, *Morris B* 111 (K).

***Bulbophyllum humblotii* Rolfe**

Dwarf epiphyte with pseudobulbs set 1-3 cm apart on the rhizome. One rounded, glossy-green leaf. Flowers creamy-white with a yellow lip.

**Flowering:** July. **Habitat:** *Brachystegia-Uapaca* woodland, usually on *Uapaca* spp. at a high level. **Altitude:** c. 800 m. **Distribution:** Tanzania, Malawi, Zimbabwe, Seychelles and Madagascar.

**Localities:** Limbuli, *la Croix I & Spurrier M* 711 (K, MAL).

***Bulbophyllum intertextum* Lindl.**

Dwarf, epiphytic herb, up to about 10 cm high when flowering. Inflorescence erect, about 12-

flowered, peduncle and rhachis wiry. Flowers greenish-white.

**Flowering:** January-April. **Habitat:** Evergreen riverine forest. **Altitude:** c. 900 m. **Distribution:** Widespread in tropical Africa, also in the Seychelles.

**Localities:** Ruu Gorge, *Morris B* 61D (K).

***Bulbophyllum josephi* (Kuntze) Summerh.**

Epiphytic herb, up to 20 cm long when flowering. Inflorescence arching or pendant, densely many-flowered. Flowers white, lip white or yellow, strong fruity perfume.

**Flowering:** April. **Habitat:** *Brachystegia-Uapaca* woodland. **Altitude:** c. 1200 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Mulanje foothills, *Mahon s.n.* (K).

***Bulbophyllum maximum* (Lindl.) Rchb.f.**

Robust epiphytic herb. Pseudobulbs 2-leaved. Inflorescence erect, up to 50 cm long, rhachis bilaterally flattened with an undulate edge. Flowers greenish with purple markings, borne alternately either side of the rhachis, a few opening at a time.

**Flowering:** mainly September-January. **Habitat:** On *Brachystegia*. **Altitude:** c. 900 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Limbuli, *Morris B* 17 (K).

***Bulbophyllum rugosibulbum* Summerh.**

Epiphyte with globose to ovoid, purple-red, wrinkled pseudobulbs set closely on the rhizome. The two grass-like leaves are deciduous in the dry season. Flowers deep maroon-purple.

**Flowering:** December. **Habitat:** *Brachystegia* woodland, in mats on trunks and lower branches. **Altitude:** c. 1250 m. **Distribution:** S. Tanzania, W. Zambia and Malawi.

**Localities:** Path to Chambe Plateau, *Jenkins P* in *la Croix I* 918 (K).

***Bulbophyllum sandersonii* (Hook.f.) Rchb.f.**

ssp. *sandersonii*

Epiphytic herb. Pseudobulbs yellow, angled with undulate edge, arranged 2-6 cm apart on rhizome. Flowers purple.

**Flowering:** July. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1250-1350 m. **Distribution:** Zambia, Malawi and E. Zimbabwe.

**Localities:** Chiphalombe River, *Chapman JD & Chapman EG* 7905 (E). Mchese Mt., below the dome, *Jenkins P* in *la Croix* 1044 (K).

***Bulbophyllum scaberulum* (Rolfe) Bolus**

Epiphytic herb with ovoid, 2-leaved pseudobulbs. Inflorescence erect, up to 24 cm long, rhachis fleshy and bilaterally flattened. Flowers



fleshy, green with brown mottling, up to 30 in the inflorescence with several opening at one time.

**Flowering:** November-January. **Habitat:** Above the river or in protected gullies in *Brachystegia* woodland. **Altitude:** 900-1350 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Chiphalombe River, *Chapman JD & Chapman EG 7905* (K). Likabula Valley, *Morris B 87* (K).

### *Bulbophyllum stoltzii* Schltr.

Small epiphytic herb. Inflorescence up to 9 cm long. Flowers white with yellow lip, slightly unpleasant smell.

**Flowering:** May. **Habitat:** Riverine montane forest. **Altitude:** c. 1900 m. **Distribution:** Tanzania and Malawi.

**Localities:** Chambe Plateau towards the Knife-Edge, *Chapman JD & Chapman EG 7556* (E).

### *Bulbophyllum unifoliatum* De Wild.

var. *infracarinatum* (G.Will.) J.J.Verm.

Epiphytic herb, up to 20 cm when flowering. Flowers cream with purple dots, lip purple with a smooth edge, keeled below.

**Flowering:** December-January. **Habitat:** Riverine forest. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Ruu Gorge, near Lujeri Power Station, *Morris B 206* (K).

### *Corymborkis corymbis* Thouars

Terrestrial herb, 50-150 cm high. Stem leafy along its length. Leaves dark green, distichous. Flowers green.

**Flowering:** January. **Habitat:** In deep shade in evergreen forest. **Altitude:** c. 850 m. **Occurrence:** Common and locally abundant. **Distribution:** Widespread in tropical Africa, South Africa (KwaZulu-Natal, Transkei), Madagascar and Mascarene Islands.

**Localities:** Little Mulosa River, Crater Gorge, *Chapman JD & Chapman EG 6650* (FHO).

### *Cynorkis anacamptoides* Kraenzl.

var. *anacamptoides*

Slender, terrestrial herb, up to 60 cm high. Two-several basal leaves, pedunculate leaves bract-like. Flowers purple or pale pink.

**Flowering:** February-March. **Habitat:** Seepage areas in montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Locally abundant. **Distribution:** Widespread in tropical Africa.

**Localities:** Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7204* (K). Madzeka Plateau, *Johnston-Stewart NGB 276* (K).

### *Cynorkis brevicealcar* P.J.Cribb

Terrestrial herb, 8-15 cm high, with two basal leaves. Flowers white with purple patches.

**Flowering:** February-March. **Habitat:** In shallow, peaty soil or moss on steeply, sloping seepage rocks. In forest and montane grassland. **Altitude:** 1700-2150 m. **Occur-**

**rence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Mulanje Mt. *Chapman JD 504* (K). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7202* (MO). Chambe West Face Shelf, *Chapman JD & Chapman EG 9504* (FHO, K). Likabula to Lichenya path, *Chapman JD & Tawakali EJ 5522* (FHO, K).

### *Cynorkis buehneri* Rolfe

Terrestrial herb, up to 44 cm tall when flowering. One or two basal leaves, smaller pedunculate leaves. Flowers pink.

**Flowering:** February. **Habitat:** In thin soil over rock near streams. **Altitude:** c. 2000 m. **Distribution:** S. Malawi.

**Localities:** Lichenya Plateau, *Chapman JD & Tawakali EJ 5527* (FHO).

### *Cynorkis hanningtonii* Rolfe

Terrestrial herb, up to 20 cm high. Flowers pink to mauve.

**Flowering:** March. **Habitat:** In moss or humus in *Brachystegia* woodland or forest. **Altitude:** c. 1600-1750 m.

**Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Madzeka, *Johnston-Stewart NGB 284* (K).

### *Cynorkis kassneriana* Kraenzl.

Terrestrial herb, up to 44 cm high. Usually one basal leaf, dark green above, purple below. Flowers pale purple and deep purple.

**Flowering:** March-April. **Habitat:** Among dense shrubs and trees or on mossy streamside rocks. **Altitude:** 1400-2000 m.

**Distribution:** D.R. Congo, Ethiopia, Uganda, Kenya, Tanzania, Zambia (Nyika), Malawi, Zimbabwe, Mozambique Swaziland and South Africa (Transvaal).

**Localities:** Just below Thuchila Hut, *Brummitt RK 9726* (K). Likulezi valley, at the Likulezi Ng'ono Waterfall, *Chapman JD & Chapman EG 7536* (MO).

### *Cynorkis kirkii* Rolfe

Terrestrial herb, 9-46 cm high, with usually one basal leaf. Flowers pink on the sepals and spur, cream tinged with purple on the hood and lobe creamy-yellow.

**Flowering:** January. **Habitat:** Steep, mossy banks. **Altitude:** c. 950 m. **Distribution:** Tanzania, Malawi, Mozambique and E. Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9486* (FHO).

### *Cyrtorchis arcuata* (Lindl.) Schltr.

ssp. *whytei* (Rolfe) Summerh.

Epiphytic and lithophytic herb. Woody stems, up to 30 cm long, with long stout grey roots. Leaves thick-textured and glossy. Flower white, fading to yellow.

**Flowering:** November-December. **Habitat:** In light shade in riverine forest or high-rainfall woodland. **Altitude:** c. 1000 m.



**Occurrence:** Locally frequent. **Distribution:** Ghana, Liberia, Sierra Leone, Ivory Coast, Togo, D.R. Congo, Zambia and Malawi.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8968* (FHO). Likabula, *Morris B 44* (K).

*Cyrtorchis crassifolia* Schltr.

Dwarf, epiphytic herb, up to 4 cm high. Leaves succulent, grey-green. Inflorescences 1-2, arising from the axils of the lower leaves. Flowers creamy-white fading to apricot.

**Flowering:** November-early December. **Habitat:** On trunks and lower branches in *Brachystegia* woodland on slopes and ridges, never in hollows. **Altitude:** c. 1400 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Chambe path, Likabula Valley, *la Croix I 896* (K). Likabula Valley, *Morris B 163* (K).

*Cyrtorchis ringens* (Rchb.f.) Summerh.

Epiphytic herb with woody stems, up to 30 cm long, covered in black-brown, old leaf bases. Inflorescences mainly borne below the leaves. Flowers creamy-white and scented.

**Flowering:** February-April. **Habitat:** Riverine forest. **Occurrence:** Local. **Distribution:** Widespread in tropical Africa.

**Localities:** Ruu Gorge, *Johnston-Stewart NGB 449* (K)

*Diaphananthe stolzii* Schltr.

Epiphytic, occasionally lithophytic, herb with pendant stems, up to 1.5 m long. Leafy in the apical part. Inflorescence on the stem opposite leaf axils and on the bare part of the stem. Flowers white and scented in the evening.

**Flowering:** March-April. **Habitat:** Evergreen forest, often near a river. **Altitude:** c. 1000 m. **Occurrence:** Fairly frequent. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** At the dam above the power station at bottom of Ruu Gorge, *Chapman JD & Chapman EG 8332* (MO)

*Diaphananthe subsimplex* Summerh.

Epiphytic herb forming untidy masses. Inflorescences, up to 3 cm long, borne along the stem, opposite the leaves. Flowers greenish-white or yellowish.

**Flowering:** January. **Fruiting:** May. **Habitat:** Evergreen montane forest. **Altitude:** c. 2000 m. **Distribution:** Uganda, Kenya, Tanzania, Malawi and Zimbabwe.

**Localities:** Lichenya Plateau, *Morris B 157* (K).

*Didymoplexis africana* Summerh.

Leafless, glabrous, slender, saprophytic herb. Inflorescence 1-many flowered. Flowers white to pale pink.

**Fruiting:** September. **Habitat:** In leaf litter of forest floor. **Altitude:** c. 800 m. **Distribution:** S. Malawi, Mozambique

and E. Zimbabwe. **Comments:** This is the only collection from Malawi (in fruit).

**Localities:** Ruu Gorge, near Lujeri power station, *Ball JS 1333* (K).

*Disa baurii* Bolus

Syn. *Herschelianthe baurii* (Bolus) Rauschert; *Disa hamatopetala* Rendle

Terrestrial herb, up to 40 cm high when flowering. Basal leaves produced after flowering. Inflorescence with fewer than 5 flowers. Flowers deep purple-blue, large.

**Flowering:** September onwards. **Habitat:** Montane grassland. **Altitude:** 1950-2400 m. **Occurrence:** Infrequent but may be very locally common. **Distribution:** D.R. Congo, Tanzania (southern highlands), Zambia (Nyika Plateau), Malawi (Nyika Plateau, Mt. Mulanje), Mozambique, Zimbabwe (Chimanimani) and South Africa.

**Localities:** Chiphalombe shelf, *Chapman JD & Chapman EG 8072* (MO). Approaching the Knife-Edge from Chambe, *Chapman JD & Chapman EG 8131* (E). Nanderlanda Col, *Struggnell AM 98* (FHO).

*Disa brevicornis* (Lindl.) Bolus

Syn. *Monadenia brevicornis* Lindl.

Terrestrial herb, up to 50 cm high. Stem leafy; the lower leaves largest, diminishing in size up the stem, grading into the floral bracts. Flowers deep red and yellow.

**Flowering:** February. **Habitat:** Montane grassland and heathland and rocky mountain tops. **Altitude:** 2100-2700 m. **Occurrence:** Frequent where it occurs. **Distribution:** S. Malawi (Mt. Mulanje), E. Zimbabwe, South Africa and a single record from Madagascar.

**Localities:** Top of Cilemba Peak, *Brummitt RK et al. 15943* (K). Thuchila Plateau, Sapitwa Peak, *Morris B 734* (K). Lichenya Plateau, *la Croix I et al. 461* (K).

*Disa erubescens* Rendle

ssp. *carsonii* (N.E.Br.) H.P.Linder

Terrestrial herb with separate sterile (up to 12 cm high) and fertile (up to 90 cm high) shoots. Leaves lanceolate and sheathing. Flowers red.

**Flowering:** February. **Habitat:** On moss and grass-covered seepage rocks in montane grassland. **Altitude:** c. 2000 m. **Distribution:** Burundi, D.R. Congo, Tanzania, Zambia and Malawi.

**Localities:** Chambe Plateau, *Blackmore S et al. 362* (K).

*Disa fragrans* Schltr. ssp. *fragrans*

Terrestrial herb. Separate sterile (up to 7 cm high) and fertile (up to 50 cm high) shoots. Stems leafy. Leaves blotched with red-purple. Flowers pale pink blotched with dark pink, heavily perfumed.

**Flowering:** May-June. **Habitat:** Montane grassland, steep seepage rocks or in moss on top of rocks. **Altitude:** c. 2100 m. **Occurrence:** Rare, although where it does occur it forms



large colonies. **Distribution:** Tanzania (Southern Highlands), Malawi (Mt. Mulanje), Mozambique (Gorongosa Mts.), South Africa and Lesotho.

**Localities:** Lichenya Plateau, base of Cilemba Peak, *la Croix I 659* (K). Lichenya Plateau, Nyazimba Stream, *Royle P 1040* (K).

*Disa perplexa* H.P.Linder

Robust herbs, up to 40 cm high. Two lanceolate leaves at base of flowering stem, the rest sheathing. Flowers purplish blotched pale purple.

**Flowering:** February. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Distribution:** Nigeria, Kenya, Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Sombani, *Johnston-Stewart NGB 391* (K).

*Disa saxicola* Schltr.

Terrestrial herb, up to 40 cm high. Stem leafy, the lower leaves sheathing, the upper leaves spreading. Flowers pale pink with purple markings.

**Flowering:** February. **Habitat:** Rocky mountain top. **Altitude:** c. 2300 m. **Distribution:** Tanzania, Zambia, Malawi, Zimbabwe, Swaziland and South Africa (Transvaal & KwaZulu-Natal).

**Localities:** Top of Cilemba Peak, *Brummitt RK et al. 15945* (K).

*Disperis dicerochila* Summerh.

Terrestrial herb, up to 24 cm high. Two opposite leaves. 1-3 flowers, pink-mauve.

**Flowering:** February. **Habitat:** Amongst moss in forest or in pine plantations. **Altitude:** c. 2000 m. **Occurrence:** Frequent. **Distribution:** Ethiopia, D.R. Congo, Uganda, Kenya, Tanzania, Zambia (Nyika), Malawi and Zimbabwe. **Localities:** Chambe Plateau, near the forestry cottage, *Blackmore S et al. 326* (K). Path to Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7269* (MO). Thuchila Plateau, *Morris B 740* (K).

*Disperis leuconeura* Schltr.

Slender, terrestrial herb, up to 15 cm high. Two basal leaves sheathing the stem, dark green with 3 longitudinal white or pink-tinged veins. Flowers pinky mauve.

**Flowering:** December-January. **Habitat:** In leaf litter and deep shade in evergreen forest. **Altitude:** c. 750 m. **Distribution:** Tanzania, S. Zambia, S. Malawi and E. Zimbabwe. **Localities:** Esperanza, *Johnston-Stewart NGB 487* (K).

*Eulophia eylesii* Summerh.

Slender terrestrial herb, up to 45 cm high. No green leaves. Flowering stem arises from about half-way along a cigar-shaped tuber. Flowers purplish-green.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1200 m. **Occurrence:** Locally common (as colonies). **Distribution:** Burundi, D.R. Congo, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likulezi path to Chinzama, *Jenkins P s.n.* (K). Phalombe Gorge, *Johnston-Stewart NGB 327* (K).

*Eulophia fridericii* (Rchb.f.) A.V.Hall

Terrestrial herb, up to 50 cm high. Leaves bright green. Flowers yellow, heavily veined with purple.

**Flowering:** February. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 700 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Angola and South Africa. **Localities:** Likabula Valley, *la Croix I 433* (K).

*Eulophia hians* Spreng.

var. *nutans* (Sond.) S.A.Thomas

Syn. *Eulophia nutans* Sond.; *Eulophia clavicornis* Lindl.

var. *nutans* (Sond.) A.V.Hall

Terrestrial herb, up to 75 cm high. Leaves fully developed at flowering. Sepals green; petals white, tinged with pink.

**Flowering:** January-March. **Habitat:** Montane grassland. **Altitude:** c. 1500 m. **Distribution:** Kenya, Tanzania, Malawi, South Africa and Madagascar.

**Localities:** Lichenya path, *Jenkins P 31* (K).

*Eulophia horsfallii* (Bateman) Summerh.

Very robust terrestrial herb, up to 3 m high. Large, lanceolate, evergreen leaves, up to 2 m long. Flowers pink to purple-pink, mid-lobe of lip purple with cream lamellae, side lobes green, veined purple.

**Flowering:** January-February and June-October. **Habitat:** Riverine forest. **Altitude:** c. 550 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Lujeri, *la Croix I 344* (K).

*Eulophia longisepala* Rendle

Slender, terrestrial herb, up to 35 cm high. Plants grow from a branched, whitish tuber set vertically in the ground. No green leaves. Flowers purple-green, the white lip heavily veined with purple. Linear, erect sepals.

**Flowering:** November-December. **Habitat:** Dry *Brachystegia* woodland. **Distribution:** Burundi, D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Angola and South Africa (N. Kwazulu-Natal).

**Localities:** Mchese Mt., *Johnston-Stewart NGB 259* (K). Likabula Valley, *la Croix I 223* (K).

*Eulophia monticola* Rolfe

Terrestrial herb, up to 40 cm high. 3-7 linear leaves forming a fan. Flowers: sepals green blotched brown; petals yellow, veined brown.

**Flowering:** November-December. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Distribution:** Mt. Mulanje, Malawi and in E. Zimbabwe only.

**Localities:** Chinzama, *Johnston-Stewart NGB 218* (K). Lichenya Plateau, *la Croix I 236* (K).



***Eulophia norlindhii* Summerh.**

Slender, terrestrial herb, up to 40 cm high. Only 3 brownish bract-like leaves present at the base of the stem at flowering. Flowers green, with green or brownish sepals.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** 650-1050 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Phalombe, *Johnston-Stewart NGB 346* (K). Likabula Valley, near foot of Lichenya path, *La Croix I 369* (K).

***Eulophia nyassae* Rendle**

Robust terrestrial herb, up to 40 cm high. Vestigial, brown leaves. Flowers yellow-green tinged with purple, lip white with purple veins and 3-5 lines of papillae on the mid-lobe.

**Flowering:** January. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Zimbabwe and Angola.

**Localities:** Lichenya path, near waterfall, *Jenkins P 66* (K).

***Eulophia odontoglossa* Rchb.f.**

Terrestrial herb, up to 100 cm high. Grass-like leaves well-developed at flowering. Flowers yellow streaked with red-purple.

**Flowering:** October. **Habitat:** Amongst *Hyparrhenia* in open *Brachystegia* woodland. **Altitude:** c. 1200 m. **Occurrence:** Common but scattered. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Likabula Valley, *Greenway PJ 6334* (K).

***Eulophia orthoplectra* (Rchb.f.) Summerh.**

Terrestrial herb, up to 100 cm, flowering when leafless. Inflorescence laxly up to 20-flowered. Flowers yellow, heavily veined with red.

**Flowering:** Late August-October. **Habitat:** *Brachystegia* woodland. **Distribution:** Widespread in tropical Africa.

**Localities:** Mt. Mulanje (no locality given), *Whyte A s.n.* (BM).

***Eulophia rara* Schltr.**

Slender, terrestrial herb, up to 35 cm high. Leaves grass-like, present at flowering. Flowers pink, with yellow lamellae on lip.

**Flowering:** December-January. **Habitat:** *Brachystegia* woodland. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Chambe path, *Jenkins P s.n.* (K).

***Eulophia rolfeana* Kraenzl.**

Slender, terrestrial herb, up to 30 cm high. Stems arising from a chain of pear-shaped pseudobulbs. Inflorescence 2-flowered, emerging from 3 short grass-like leaves. Flowers yellowish-green veined with purple.

**Flowering:** November. **Habitat:** Dry *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Sporadic. **Distribution:** D.R. Congo, Zambia, Malawi and Zimbabwe.

**Localities:** Likabula Valley, *la Croix I 219* (K).

***Eulophia seleensis* (De Wild.) Butzin**

Slender terrestrial herb, up to 50 cm high. Chain of pear-shaped pseudobulbs. Fine grass-like leaves at flowering. Flowers white or pale purple, lip veined purpled.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** 1100-1600 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Zimbabwe and Angola.

**Localities:** Phalombe Gorge, *Johnston-Stewart NGB 324* (K). Lichenya path, near first stream crossing, *la Croix I 371* (K).

***Eulophia subsaprophytica* Schltr.**

Slender, terrestrial, semi-saprophytic herb, up to 80 cm high. Leaves vestigial. Inflorescence laxly many-flowered. Flowers yellow-purple.

**Flowering:** November-December. **Habitat:** Dry *Brachystegia* woodland and tall grass and scrub. **Altitude:** 700-1350 m. **Distribution:** D.R. Congo, Tanzania, Zambia and Malawi, Zimbabwe.

**Localities:** Boma Path, *Johnston-Stewart NGB 481* (K). Likabula Valley, near the base of the Lichenya path, *la Croix I & Hutson 505* (K).

***Eulophia venulosa* Rchb.f.**

Terrestrial herb, up to 40 cm high when flowering. Flowers appear just before the leaves. Flowers pink and white.

**Flowering:** October-November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** Mchese Mt., low down the western slopes close to Bwaibwai forest, *Chapman JD & Chapman EG 8916* (FHO). Likabula Valley, Lichenya path, *la Croix I 370* (K). Likabula Valley, *Morris B 335a* (K).

***Eulophia zeyheri* Hook.f.**

Robust, terrestrial herb, up to 70 cm high. Leaves poorly developed at flowering. Flowers pale yellow with deep brownish blotch on the lip.

**Flowering:** October. **Habitat:** Amongst bracken and grass in *Brachystegia* woodland. **Altitude:** c. 1200 m. **Occurrence:** Locally common as scattered, solitary specimens. **Distribution:** Widespread in tropical Africa and South Africa. **Localities:** Likabula Valley, *Greenway P 6337* (FHO).

***Habenaria amoena* Summerh.**

Terrestrial herb, up to 55 cm high. Stem leafy, the largest leaf in the middle. Flowers yellow-green, petals 2-lobed, spur up to 2.2 cm long.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** C. and S. Malawi, E. Zimbabwe and Madagascar.



**Localities:** Likabula Valley, *Chapman JD & Chapman EG 7302* (E).

*Habenaria humilior* Rchb.f.

Terrestrial herb, up to 70 cm high. Stems leafy. Flowers greenish-white, fragrant.

**Flowering:** February-March. **Habitat:** Damp places in woodland clearings and montane grassland. **Altitude:** c. 1500 m. **Occurrence:** Locally abundant. **Distribution:** Ethiopia, Sudan, D.R. Congo, Uganda, Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Madzeka Basin & Little Ruu Gorge, *Allen DJ 532* (FHO). Chambe Plateau, *Jenkins P 119* (FHO).

*Habenaria macrostele* Summerh.

Slender, terrestrial herb, up to 60 cm high. Flowers green and white with an unpleasant smell.

**Flowering:** February-March. **Habitat:** Wet soil and seepage areas in montane grassland. **Altitude:** 1700-2000 m. **Distribution:** D.R. Congo, Burundi, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Chambe Plateau, *Blackmore S et al. 424* (K). Thuchila Plateau, *Morris B 736* (K). Lichenya Path, *la Croix I et al. 455* (K).

*Habenaria myodes* Summerh.

Terrestrial herb, up to 40 cm high. Flowers green and white with a sweet, sickly smell.

**Flowering:** March-April. **Habitat:** Open grassland. **Altitude:** c. 2400 m. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Mulanje Mt., *Emson M 4* (K).

*Habenaria nyikana* Rchb.f.

Robust, terrestrial herb, up to 100 cm high. Flowers green and white.

**Flowering:** March. **Habitat:** In grass under *Brachystegia*. **Altitude:** c. 800 m. **Distribution:** Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Likabula Valley, *la Croix I 113* (K).

*Habenaria petitiiana* (A.Rich.) Dur. & Schinz

Terrestrial herb, up to 55 cm high. Flowers green.

**Flowering:** February-March. **Habitat:** In dense shade in evergreen forest and montane grassland. **Altitude:** 1050-2000 m. **Distribution:** Cameroon, Ethiopia, D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (E. Transvaal).

**Localities:** Lichenya Plateau, *Jenkins P 54* (K). Thuchila Plateau, *Morris B 735* (K).

*Habenaria welwitschii* Rchb.f.

Terrestrial herb, up to 70 cm high. Stem leafy. Leaves linear or narrowly lanceolate, slightly folded. Flowers greenish-cream in a fairly lax inflorescence.

**Flowering:** April. **Habitat:** Montane grassland. **Altitude:** c. 2000 m. **Distribution:** D.R. Congo, Rwanda, Burundi, Uganda, Tanzania, Malawi, Mozambique and Angola.

**Localities:** Nanderlanda path, from Chinzama to Thuchila, *Jenkins P 4* (K).

*Holothrix johnstonii* Rolfe

Terrestrial herb, up to 30 cm high, with two basal leaves pressed to the ground. Flowers white, flushed with pink.

**Flowering:** May-August. **Habitat:** In peaty soil or mossy banks, often near a stream and in light shade. **Altitude:** 2100-2400 m. **Occurrence:** Locally common. **Distribution:** Endemic to S. Malawi.

**Localities:** Thuchila Shelf, *Chapman JD 5680* (FHO, K). River headwaters at the Naikoto Stream, *Chapman JD & Chapman EG 8798* (FHO, K).

*Holothrix longiflora* Rolfe

Terrestrial herb, up to 50 cm high. Two fleshy leaves appressed to the ground, one larger than the other. Flowers white, petals divided more than half-way into filiform lobes, strong, sweet fragrance.

**Flowering:** February-March. **Habitat:** Montane grassland and among grass in *Brachystegia* woodland. **Altitude:** c. 1600 m. **Distribution:** Tanzania, Zambia, Malawi and Angola.

**Localities:** Chambe Plateau, *Chapman JD 551* (K). Sombani path from Fort Lister, *Goyder DJ & Paton AJ 3653* (K).

*Holothrix orthoceras* (Harv.) Rchb.f.

Terrestrial herb, up to 20 cm when flowering. Two broad, ovate leaves pressed to the ground. Flowers white, with purple stripes on lip.

**Flowering:** April-June. **Habitat:** On rocky ground in light forest shade. **Altitude:** c. 1600 m. **Occurrence:** Locally common. **Distribution:** C. and S. Malawi, Zimbabwe and South Africa.

**Localities:** Likabula valley, along the Lichenya path, *Chapman JD & Chapman EG 8500 & 9069* (FHO).

*Jumellea usambarensis* J.J.Wood

Robust epiphytic herb, forming large clumps. Stems up to 80 cm long, lower part covered in sheathing leaf bases. Flowers white with a green spur, solitary in the leaf axils.

**Flowering:** October. **Habitat:** Montane forest. **Altitude:** c. 1900 m. **Distribution:** Kenya, Tanzania and S. Malawi.

**Localities:** Lichenya Plateau, near the C.C.A.P. Hut, *Chapman JD & Chapman EG 8281* (MO). Lichenya Forest, *Morris B 161* (K).

*Microcoelia moreauae* L.Jonsson

Dwarf, epiphytic herb with radially spreading roots clinging closely to the bark. Inflorescences 4 per plant, each up to 3 cm long. Flowers about 4 mm long, white.



**Flowering:** August. **Habitat:** On twigs and branches overhanging streams in low-lying areas. **Distribution:** Kenya, Tanzania, Malawi and Zimbabwe.

**Localities:** Mimosa, *la Croix I* 182 (K).

*Mystacidium tanganyikense* Summerh.

Delicate, dwarf, epiphytic herb, up to 5 cm high when flowering. Leaves dark green with raised reticulate venation. Flowers star-shaped, translucent, white.

**Flowering:** January-May. **Habitat:** Among moss on lianes, trunks and branches in evergreen forest. **Altitude:** 1800-2000 m. **Occurrence:** Often locally abundant. **Distribution:** Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Chambe Plateau, *Morris B* 124 (K). Thuchila Plateau, *Morris B* 741 (K). Lichenya Plateau, below C.C.A.P. Hut, *la Croix I et al.* 460 (K).

*Neobolusia stolzii* Schltr.

Terrestrial herb, up to 65 cm high. Flowers green, lip purple with a green margin.

**Flowering:** February. **Habitat:** Montane grassland and seepage slopes. **Altitude:** 1800-2100 m. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Sombani, *Johnston-Stewart NGB* 362 (K). Lichenya path, Makatula turn-off, *la Croix I et al.* 459 (K).

*Nervilia kotschyi* (Rchb.f.) Schltr. var. *kotschyi*

Terrestrial herb, up to 42 cm high. Single, heart-shaped, heavily-pleated, prostrate leaf appearing after flowering. Flower greenish with purple veins.

**Flowering:** November. **Habitat:** In grass under *Brachystegia* woodland or plantations. **Altitude:** 750-1100 m. **Distribution:** Widespread from Senegal, Mali, Ethiopia and Sudan to the *Flora Zambesiaca* area and Madagascar. **Comments:** *la Croix* 367 was flowering in April in the Likabula Valley.

**Localities:** Phalombe Gorge, *Johnston-Stewart NGB* 321 (K). Likabula Valley, *la Croix I* 367 (K).

*Nervilia pectinata* P.J.Cribb

Terrestrial herb, up to 14 cm high. Single, horizontal leaf, obscurely 7-angled. Single flower, white with purple markings, smells of camphor.

**Flowering:** November. **Habitat:** In deep shade in the leaf litter of evergreen forest. **Altitude:** c. 1000 m. **Distribution:** S. Tanzania, Zambia (Nyika), Malawi, Mozambique and Zimbabwe.

**Localities:** Ruu Gorge, *la Croix I* 361 (K).

*Nervilia shirensis* Williamson

Terrestrial herb, up to 40 cm high. Single, ovate, pleated leaf appearing after flowering. Flowers green, veined purple; lip white, veined purple.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** D.R. Congo, Tanzania. **Localities:** Phalombe Gorge, *Johnston-Stewart NGB* 322 (K).

*Nervilia stolziana* Schltr.

Terrestrial herb, up to 13 cm high. Leaf solitary, prostrate, appearing after flowering, reniform or orbicular, often silver reticulate venation on the upper surface, lower surface purple. Flowers yellow with hairy, pink lip.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1500 m. **Distribution:** D.R. Congo, S. Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Phalombe Gorge, *Johnston-Stewart NGB* 323 (K).

*Oeceoclades maculata* Lindl.

Terrestrial herb, up to 40 cm high. Pseudobulbs each bear a single leaf. The inflorescence arises from the base of the pseudobulb. Flowers pink, lip yellow with purple blotches.

**Flowering:** February. **Habitat:** In deep shade near the river. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa, Florida, West Indies and tropical South America.

**Localities:** Likabula Valley, near river, *la Croix I* 447 (K).

*Platycoryne mediocris* Summerh.

Slender, terrestrial herb, up to 50 cm high. Flowers bright orange, 3-4 per head.

**Flowering:** January-February. **Habitat:** Poorly drained grassland and seepage rocks. **Altitude:** c. 800 m. **Occurrence:** Locally abundant. **Distribution:** Burundi, D.R. Congo, Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Likabula Valley, *la Croix I* 254 (K).

*Platycoryne pervillei* Rchb.f.

Terrestrial herb up to 70 cm high. 5-8 leaves evenly spaced along the stem. Compact inflorescence of 2-8 bright orange flowers.

**Flowering:** February. **Habitat:** In grass in damp areas. **Altitude:** c. 1000 m. **Occurrence:** Common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Madagascar.

**Localities:** Satwi Stream, near the Lichenya path in the Likabula Valley, *Chapman JD & Chapman EG* 7190 (MO).

*Platylepis glandulosa* (Lindl.) Rchb.f.

Terrestrial herb, up to 35 cm high. Leaves spirally arranged, slightly asymmetrical, margins often undulate. Inflorescence densely many-flowered. Flowers very small, green with white or pinkish-brown lip.

**Flowering:** December-March. **Habitat:** Marshy forest. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa and South Africa (KwaZulu-Natal).

**Localities:** Mimosa, *la Croix I & Spurrier M* 523 (K).

*Polystachya adansoniae* Rchb.f.

Epiphytic herb, up to 15 cm high when flowering. Inflorescence cylindrical, densely



many-flowered, subtended by a flattened sheath. Flowers greenish-yellow, lightly scented.

**Flowering:** December-January. **Habitat:** *Brachystegia* woodland. **Distribution:** Widespread in tropical Africa.

**Localities:** North side of Mulanje, *la Croix I* 247 (K).

*Polystachya albescens* Ridl.

var. *imbricata* (Rolfe) Summerh.

Upright, epiphytic herb, up to 45 cm high. Clustered stems with several nodes covered with brown tubular sheaths. Flowers greenish-white.

**Flowering:** November. **Habitat:** High-rainfall *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Cameroon, Tanzania, Zambia, Malawi, Zimbabwe and Angola.

**Localities:** Boma Path, lower slopes of Mt. Mulanje, *Chapman JD & Chapman EG* 6826 (FHO).

*Polystachya brassii* Summerh.

Epiphytic or lithophytic herb, up to 4 cm high, forming mats or chains of pseudobulbs. Flowering when leafless. Leaves grass-like. Flowers lilac with pale yellow line on the base of the lip, slightly scented.

**Flowering:** August-October. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1400 m. **Distribution:** D.R. Congo, Zambia and Malawi.

**Localities:** Likabula Valley, *Morris B* 131 (K).

*Polystachya cultriformis* (Thouars) Sprengl.

Epiphytic herb forming clumps. Pseudobulbs conical or cylindrical, up to 18 cm long, each bearing a single leaf. Inflorescence densely many-flowered, erect or arching. Flowers white.

**Flowering:** November-December. **Habitat:** Evergreen forest. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Ruogorge, *Morris B* 522A (K).

*Polystachya dendrobiiflora* Rehb.f.

Epiphytic or terrestrial herb, up to 40 cm high. Leaves distichous and grass-like. Flowers white with mauve spots on lip.

**Flowering:** August-September. **Habitat:** Epiphytic on *Xerophyta equisetoides*. **Altitude:** c. 1200 m. **Occurrence:** Locally common. **Distribution:** Burundi, Kenya, Tanzania, Zambia, Malawi, Zimbabwe, Mozambique and Angola.

**Localities:** Mchese Mt., on the ridge enclosing the Nthambe gorge on the south side above Misomali, *Chapman JD & Chapman EG* 8839 (FHO).

*Polystachya fusiformis* (Thouars) Lindl.

Epiphytic herb, usually pendant, up to 60 cm long. Pseudobulbs cylindrical with several nodes. New growth arises from the middle. Flowers small, deep purple or green marked with purple.

**Flowering:** November-December. **Habitat:** Evergreen forest. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa, South Africa (Transvaal, KwaZulu-Natal), Madagascar and the Mascarene Islands.

**Localities:** Ruogorge, *Morris B* 522 (K).

*Polystachya greatrexii* Summerh.

Epiphytic herb, up to 4 cm high when flowering. Leaves grass-like appearing after the flowers. Flowers lilac, lip greenish-yellow speckled red, lightly scented.

**Flowering:** August-September. **Habitat:** Evergreen forest and high-rainfall *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Not particularly common. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Ruogorge, *la Croix I* 345 (K). Lauderdale Crater, *la Croix I* 694 (K).

*Polystachya heckmanniana* Kraenzl.

Dwarf, epiphytic herb with 2-4 leaves. Flowers white and yellow.

**Flowering:** September. **Habitat:** In the canopy of evergreen forest and high-rainfall *Brachystegia* woodland. **Altitude:** 1500-1650 m. **Distribution:** Kenya, Tanzania and Malawi.

**Localities:** Chitakali Stream crossing on the Boma Path, *Chapman JD & Chapman EG* 6867 (MO). Chisongeli Forest, *Chapman JD & Chapman EG* 9317 (FHO).

*Polystachya lawrenceana* Kraenzl.

Lithophytic herb, with 3-4 leaves, forming clumps. Pseudobulbs conical-elliptic. Flowers fleshy, yellow-green flushed maroon, lip pale pink.

**Flowering:** November-December. **Habitat:** Exposed rock faces in montane grassland. **Altitude:** 1350-1600 m. **Occurrence:** Very local. **Distribution:** Zomba, Mulosa and Mulanje Mts., S. Malawi.

**Localities:** Thuchila path, *collector unknown* (K).

*Polystachya johnstonii* Rolfe var. *johnstonii*

Dwarf epiphytic herb forming dense clumps, up to 10 cm high when flowering. Flowering when leafless, flowers green and white, sometimes flushed with pink.

**Fruiting:** August. **Habitat:** Epiphytic on *Xerophyta splendens* in exposed montane grassland. **Altitude:** c. 1900 m. **Occurrence:** Fairly common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, near the Linji Falls at the escarpment edge, *Chapman JD & Chapman EG* 8236 (MO). Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG* 8244 (K, MO). Chambe Plateau, *la Croix I* 718 (K). Sombani Plateau, *la Croix I & Spurrier M* 359 (K).

*Polystachya purpureo-bracteata* P.J.Cribb & *la Croix*

Epiphytic or lithophytic herb, up to 16 cm high forming small clumps. Leaves bright green,



tinged purple on margins and base. Bracts deep purple. Flowers yellow-green with purple veins, lip white.

**Flowering:** October-November. **Habitat:** Epiphytes in evergreen forest; lithophytes on exposed rock faces. **Altitude:** 1200-1500 m. **Occurrence:** Occasional, but not uncommon in the area where it grows. **Distribution:** Endemic to Mt. Mulanje. **Comment:** *Morris 2C* was growing on *Syzygium*. **Localities:** Ruo Gorge, *Johnston-Stewart NGB 287, la Croix I & Johnston-Stewart NGB 504* (K). Little Ruo Plateau above power station, *Morris B 2C* (K).

### *Polystachya simplex* Rendle

Pendant, epiphytic herb up to 50 cm long. Pseudobulbs hanging in long chains, new ones arising from the middle of the one from previous season. Inflorescence shorter than the terminal leaves. Flowers yellow-green with reddish veining.

**Flowering:** January-February. **Habitat:** Evergreen forest. **Altitude:** c. 1100 m. **Distribution:** D.R. Congo, Uganda, Kenya, Tanzania, Malawi and Zimbabwe.

**Localities:** Linji (Lichenya) Plateau, *Jenkins P 39* (K). Ruo Gorge, *Morris B 69* (K).

### *Polystachya songaniensis* G.Will.

Terrestrial herb, 10-15 cm high when flowering. Pseudobulbs mass together to form a mat. Leaves grass-like, 2-3 per plant. Flowers pink and produced before the leaves.

**Flowering:** December. **Habitat:** On flat rocks near a stream. **Altitude:** c. 1800 m. **Distribution:** Endemic to S. Malawi. **Comments:** The flowering time of this specimen is later than that given in *la Croix et al.* (1991) (September-October).

**Localities:** Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9437* (FHO, MO).

### *Polystachya tessellata* Lindl.

Terrestrial herb, up to 60 cm high. Conical pseudobulbs, 3-4 dark green leaves. Flowers small, lemon-yellow.

**Flowering:** January-February. **Fruiting:** May. **Habitat:** On boulders in light shade in riverine woodland and forest. **Altitude:** c. 900 m. **Occurrence:** Sporadic and non-gregarious. **Distribution:** Widespread in tropical Africa and South Africa (Transvaal, KwaZulu-Natal, Transkei).

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8483 & 9487* (FHO).

### *Polystachya transvaalensis* Schltr.

Erect, epiphytic or lithophytic herb, usually up to 25 cm high. Flowers yellow-green or bright yellow, sometimes purple tinged, lip creamy-white and purple veined.

**Flowering:** October-January. **Habitat:** Montane evergreen forest. **Altitude:** 1800-2000 m. **Distribution:** D.R. Congo,

Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi and South Africa.

**Localities:** North side of Mulanje, *la Croix I 225* (K). Little Ruo Plateau, *Morris B 32* (K). Sombani Plateau, *Morris B 32A* (K).

### *Polystachya villosa* Rolfe

Robust, epiphytic (occasionally lithophytic) herb, up to 20 cm high. Pseudobulbs conical and slightly flattened bilaterally, yellow and ribbed. Flowers greenish-white, primrose-scented.

**Flowering:** November. **Habitat:** High-rainfall *Brachystegia* woodland. **Altitude:** c. 1800 m. **Distribution:** D.R. Congo, Tanzania, Zambia and Malawi.

**Localities:** Chambe Plateau, *Morris B 301* (K).

### *Polystachya zambesiaca* Rolfe

Epiphytic or lithophytic herb, up to 8 cm high, forming clumps. Pseudobulbs ovoid, compressed and green. Leaves pale, glaucous green with purple edge. Flowers pale yellow, lip white with purple veins.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1300 m. **Distribution:** S. Tanzania, E. Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** S.E. slopes of Mt. Mulanje, *la Croix I 360* (K).

### *Roeperocharis wentzeliana* Kraenzl.

Terrestrial herb, up to 85 cm high. Leafy stem. Flowers green.

**Flowering:** April-May. **Habitat:** Montane grassland. **Altitude:** 1800-2100 m. **Distribution:** D.R. Congo, Tanzania, Zambia (Nyika) and Malawi.

**Localities:** Madzeka, *Morris B 924* (K). Sombani Plateau, *Wild H 6241* (K).

### *Satyrium afromontanum* la Croix & P.J.Cribb

Dwarf, terrestrial herb, up to 10 cm high. Inflorescence 1-2 flowered. Flowers white.

**Flowering:** March. **Habitat:** Montane grassland in damp places sheltered by rocks. **Altitude:** c. 2400 m. **Occurrence:** In local colonies. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Madzeka Plateau, *la Croix I 566* (K).

### *Satyrium anomalum* Schltr.

Terrestrial herb, up to 100 cm high. Flowers dull mauve.

**Flowering:** February. **Habitat:** In grass under *Brachystegia*. **Altitude:** c. 1800 m. **Distribution:** Tanzania, Zambia, Malawi and Zimbabwe.

**Localities:** Sombani, *Johnston-Stewart NGB 365* (K).

### *Satyrium chlorocorys* Rolfe

Terrestrial herb, up to 80 cm high. Flowers green.

**Flowering:** February-April. **Habitat:** Montane grassland. **Altitude:** 1950-2150 m. **Occurrence:** Locally common.



**Distribution:** Uganda, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Just below Thuchila Hut, *Brummitt RK 9608* (K). Chambe Plateau, *Jenkins P 120* (K). Lichenya Plateau, *la Croix I et al. 462* (K).

*Satyrium ecalcaratum* Schltr.

Terrestrial herb, up to 35 cm high. Stem leafy. Flowers deep pink, in a dense, pyramidal inflorescence.

**Flowering:** May. **Habitat:** Under rocks. **Altitude:** 2400-2600 m. **Distribution:** D.R. Congo, Uganda, Tanzania and Malawi. **Comments:** Only known in Malawi from this one collection.

**Localities:** No specific locality, *Morris B 170* (K).

*Satyrium macrophyllum* Lindl.

Terrestrial herb, up to 30 cm high. The lowest leaves are sheath-like, the next two are ovate, large, glossy-green and spreading, the rest smaller and sheath-like up the stem. Flowers deep pink.

**Flowering:** February-March. **Habitat:** Montane grassland. **Altitude:** c. 1800 m. **Distribution:** D.R. Congo, Kenya, Tanzania, Malawi, Mozambique, Zimbabwe, Swaziland and South Africa.

**Localities:** Chambe Plateau, *Blackmore S et al. 423* (K).

*Satyrium neglectum* Schltr.

Robust, terrestrial herb, 25-100 cm high. Flowers bright pink.

**Flowering:** April. **Habitat:** Montane grassland. **Altitude:** c. 2300 m. **Occurrence:** Local. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe, South Africa, Swaziland and Lesotho.

**Localities:** Above Madzeka Basin, *Allen DJ 534* (K).

*Satyrium oliganthum* Schltr.

Slender, terrestrial herb, up to about 25 cm high. Two, fairly large, leaves near the base of the stem, other leaves smaller and bract-like. Flowers pale pink or mauve.

**Flowering:** February. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Distribution:** Tanzania, Zambia, Malawi, Zimbabwe and Angola.

**Localities:** Lichenya Plateau, *la Croix I et al 463* (K).

*Satyrium shirense* Rolfe

Slender, terrestrial herb, up to 45 cm high. Flowers creamy-white.

**Flowering:** February-April. **Habitat:** Montane grassland and seepage slopes. **Altitude:** 2000-2150 m. **Occurrence:** Frequent. **Distribution:** Zambia (Nyika) and Malawi.

**Localities:** Madzeka Basin, *Allen DJ 531* (K). Chambe Plateau, *Blackmore S et al. 364* (K). From Thuchila Hut to head of Ruo Basin, *Brummitt RK 9656* (K).

*Satyrium trinerve* Lindl.

Terrestrial herb, up to 60 cm high. Young inflorescence pyramidal, few to many-flowered. Flowers white and yellow.

**Flowering:** January. **Habitat:** Grassland burnt in alternate years. **Altitude:** c. 1800 m. **Occurrence:** Locally abundant. **Distribution:** Zambia, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 9476* (FHO).

*Schizochilus sulphureus* Schltr.

Slender, terrestrial herb, up to 20 cm high. Inflorescence densely many-flowered, bent over just below the lowest flower. Flowers bright yellow and bell-shaped.

**Flowering:** Late January-early March. **Habitat:** On seepage rocks among moss or in low, tufted, boggy grassland. **Altitude:** c. 1900 m. **Distribution:** Tanzania (Southern Highlands), Malawi (Nyika and Mt. Mulanje), Mozambique (Gúruè Mts.).

**Localities:** Linji (Upper Lichenya) Plateau, *Chapman JD & Chapman EG 7240* (MO).

*Schwartzkopffia lastii* (Rolfe) Schltr.

Dwarf, terrestrial herb up to 12 cm high. Flowers 1-3, large for the size of the plant, white with magenta lip, strong lemon perfume.

**Flowering:** November. **Habitat:** In grass under *Brachystegia* woodland. **Altitude:** c. 900 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Lichenya path, *la Croix I 372* (K).

*Stenoglottis zambesiaca* Rolfe

Epiphytic or lithophytic herb, up to 35 cm high. Leaves in a basal rosette, wavy-edged and spotted black. Flowers mauve, lip with purple spots.

**Flowering:** February-June. **Habitat:** On mossy rocks in evergreen forest. **Altitude:** c. 1400 m. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Thuchila path, *Morris B 723* (K). Great Ruo Gorge, Lujeri, *Richards HM 16726* (K).

*Stolzia compacta* P.J.Cribb

ssp. *purpurata* P.J.Cribb

Creeping epiphytic herb forming chains or mats 1 cm high. Inflorescence 1-flowered, much shorter than the leaves. Flowers purple or brick-red.

**Flowering:** May-July. **Habitat:** Montane forest. **Altitude:** c. 2000 m. **Occurrence:** Common. **Distribution:** Mt. Mulanje in Malawi and Himalaya Range in Zimbabwe.

**Localities:** Lichenya Plateau, *Morris B 158* (K).

*Stolzia repens* (Rolfe) Summerh.

var. *obtusa* G.Will.

Dwarf, creeping, epiphytic herb forming mats.



Leaves small, fleshy. Flowers very small, brick red.

**Flowering:** December. **Habitat:** Mossy branches and tree trunks in montane evergreen forest. **Altitudinal range:** c. 1800 m. **Occurrence:** Locally common. **Distribution:** E. **Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 9462* (FHO).

*Tridactyle bicaudata* (Lindl.) Schltr.

Robust epiphytic herb with erect woody stems, up to 80 cm long. Leaves distichous and variable. Flowers yellowish, in 2 rows, all facing the same way.

**Flowering:** March-April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1100-1200 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa and South Africa. **Localities:** Limbuli, *Morris B 15* (K). Sombani path, *Morris B 35* (K).

*Tridactyle tridactylites* (Rolfe) Schltr.

Epiphytic or lithophytic herb. Straggling stems, up to 1.5 m long. Leaves borne towards the apex of the stem. Flowers small, greenish.

**Flowering:** November. **Habitat:** Riverine woodland and forest. **Altitude:** 1000-1250 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Likabula Valley, on the Lichenya path where the first stream from Cilemba crosses the path, *Chapman JD & Chapman EG 6993* (MO). Low down in the Likabula Valley, *Chapman JD & Chapman EG 8967* (FHO).

*Tridactyle tridentata* (Harv.) Schltr.

Epiphytic or lithophytic herb, up to 50 cm long. Woody stems, often branched towards the base. Leaves borne towards the stem apex. Inflorescences densely 4-8-flowered borne on bare parts of the stem and opposite leaf axils. Flowers pale yellow.

**Flowering:** October-December. **Habitat:** *Brachystegia* woodland. **Altitude:** 900-1100 m. **Distribution:** D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Chapaluka path, Likabula Valley, *la Croix I 373* (K). Likabula Valley, *Morris B 213* (K).

*Ypsilopus erectus* (P.J.Cribb) P.J.Cribb & J.L.Stewart

Epiphytic herb. Short stem, covered with dark brown, acutely pointed, old leaf bases. Leaves forming a fan. Inflorescences 1 or 2, arching from base of stem. Flowers white.

**Flowering:** March-April. **Habitat:** Usually on *Brachystegia* trees, sometimes on *Widdringtonia*. **Altitude:** c. 1700 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Chambe Plateau, *Morris B s.n.* (K).

**OROBANCHACEAE**

(included in Scrophulariaceae in *Flora Zambesiaca*).

*Orobanche minor* Sm.

Parasitic herb, up to 50 cm high. Stem brownish-purple. Leaves very small. Flowers cream tinged with brownish-maroon.

**Flowering:** February-May. **Habitat:** Wooded grassland and *Brachystegia* woodland. **Altitude:** c. 1000-1300 m. **Occurrence:** Local and gregarious. **Distribution:** Widespread.

**Localities:** Likabula Valley, on the Lichenya Path, *Chapman JD & Chapman EG 8502* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9038* (FHO). Likabula to Lichenya, by the main path, *Chapman JD & Tawakali EJ 5545* (FHO).

**OXALIDACEAE**

*Biophytum abyssinicum* Steud.

Annual herb, up to 30 cm high. Leaflets membranous. Peduncles long and slender, pedicels twice as long as the calyx. Flowers pink.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Locally abundant. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9046* (FHO).

*Biophytum petersianum* Klotzsch

Annual herb, up to 25 cm or more. Leaflets opaque, in 5-11 pairs, lateral nerves prominent. Peduncles barely as long as the leaves, pedicels shorter than the calyx. Flowers pinkish-yellow.

**Flowering:** April. **Fruiting:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Locally superabundant, especially along paths. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9025* (FHO).

*Biophytum sensitivum* (L.) DC.

Annual herb, up to 20 cm high or more. Leaflets opaque, in 8-21 pairs, lateral veins not prominent. Peduncles barely as long as the leaves, pedicels shorter or the same length as the calyx. Flowers mauve.

**Flowering:** March. **Habitat:** On wet streambanks in *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Gregarious. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9014* (FHO).

*Oxalis obliquifolia* Steud.

Acaulescent, perennial herb, up to 10 cm high. Leaves trifoliate. Flowers mauve with a yellow centre, solitary.



**Flowering:** February. **Habitat:** In montane grassland on mossy rocks or beside paths. **Altitude:** 2150-2300 m. **Distribution:** Ethiopia, Sudan, D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa. **Localities:** Towards Sapitwa, on path from Chambe, *Blackmore S et al.* 383 (K). Linji (Lichenya) Plateau, above the C.C.A.P. cottage, *Chapman JD & Chapman EG 7213* (MO).

*Oxalis semiloba* Sond. var. *semiloba*

Perennial herb, with or without a stem. Leaves trifoliate. Leaflets sessile, shallowly 2-lobed to no more than half way. Flowers pink or purplish.

**Flowering:** April. **Habitat:** Track sides. **Altitude:** c. 800 m. **Distribution:** Ethiopia, D.R. Congo, Kenya, Tanzania, S. Zambia, Malawi, Mozambique, Zimbabwe, Botswana and South Africa.

**Localities:** Esperanza, *Chapman JD & Chapman EG 7485* (MO).

PASSIFLORACEAE

*Adenia digitata* (Harv.) Engl.

Sub-herbaceous climber, with tendrils, stems usually annual. Leaves deeply 5-foliate, greyish or glaucous beneath. Flowers tubular, yellow with red speckling.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, Swaziland and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8987* (FHO).

*Adenia gummifera* (Harv.) Harms  
var. *gummifera*

Woody climber with tendrils, can reach up to 15 m into the canopy. Leaves ovate to rhomboid, entire to 3-lobed, green above, greyish or glaucous on lower surface. Flowers greenish. Capsule sub-globose, up to 2.5 cm.

**Flowering:** November. **Fruiting:** October-December. **Habitat:** *Brachystegia* woodland, secondary regrowth. **Altitude:** 1000-1400 m. **Occurrence:** Fairly common. **Distribution:** Widespread in eastern Africa from Somalia to South Africa and Swaziland.

**Localities:** Likulezi Valley, *Chapman JD 469* (FHO). Above the Chitakali Stream (east branch), *Chapman JD & Chapman EG 6924* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8986* (FHO).

PHILESIACEAE

(previously in Liliaceae)

*Behnia reticulata* (Thunb.) Didr.

Slender, semi-woody climber. Leaves alternate, elliptic, with a long, tapering apex. Flowers

cream. Fruits purple, beaked, on slender pedicels.

**Flowering:** October. **Fruiting:** November. **Habitat:** Forest understorey. **Altitude:** 1250-1750 m. **Occurrence:** Common and widespread in evergreen forest. **Distribution:** Malawi, Mozambique and Zimbabwe to the southern Cape in South Africa.

**Localities:** Likulezi Valley, *Chapman JD 468* (FHO). Linji (Upper Lichenya) Plateau, *Chapman JD & Chapman EG 7250* (FHO). Likabula Valley, along the Lichenya path, *Chapman JD & Chapman EG 8168* (FHO, MO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9095* (FHO). Head of Big Ruvo Valley, *Chapman JD & Chapman EG 9395* (FHO).

PHYTOLACCACEAE

*Phytolacca dodecandra* L'Hér.

Spreading shrub to large liane, much-branched and twisting. Leaves broadly ovate. Flowers whitish to yellowish-green. Fruits succulent, reddish-orange, on terminal spikes.

**Fruiting:** October. **Habitat:** Forest. **Altitude:** c. 1200 m. **Distribution:** Widespread in tropical Africa, extending into South Africa (KwaZulu-Natal).

**Localities:** Nasato Stream source, below the Cilemba cliffs, Likabula Valley, *Chapman JD & Chapman EG 8123* (FHO).

PIPERACEAE

*Refs.* Diniz, 1996; Verdcourt, 1996.

*Peperomia abyssinica* Miq. var. *abyssinica*

Fleshy, glabrous, perennial herb, up to about 25 cm high when flowering. Leaves alternate, rhombic-elliptic. Inflorescence spikes solitary.

**Fruiting:** Over by May. **Habitat:** In deep shade on the forest floor. **Altitude:** c. 1250 m. **Occurrence:** Locally common. **Distribution:** Ethiopia, Somalia, D.R. Congo, Kenya, Uganda, Tanzania and Malawi.

**Localities:** Mchese Mt., Nandiwo Stream, *Chapman JD & Chapman EG 9100* (FHO).

*Peperomia blanda* (Jacq.) Kunth

var. *leptostachya* (Hook. & Arn.) Düll

Erect, succulent herb, up to 40 cm high. Leaves opposite, ovate or broadly elliptic, the lower ones smaller. Inflorescence spikes greenish, 2-5-clustered.

**Flowering:** January. **Habitat:** Shady rock face. **Altitude:** c. 800 m. **Distribution:** From the D.R. Congo and Uganda southwards to South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Likabula River, near the Likabula forestry depot, *Chapman JD & Chapman EG 7141* (FHO).

*Peperomia retusa* (L.f.) A.Dietr. var. *retusa*

Perennial, slightly succulent herb, up to 30 cm high. Leaves alternate, obovate, emarginate at



apex, up to 15 mm long. Inflorescence 13-45 mm long (including peduncle).

**Flowering:** November. **Habitat:** Riverine forest, on mossy tree branches or rocks. **Altitude:** c. 1800 m. **Distribution:** From the D.R. Congo and East Africa to South Africa (Transvaal, Kwazulu Natal, Cape Province).

**Localities:** Lichenya Plateau, Nessa Path Forest, *Chapman JD & Chapman EG 8241* (MO).

*Peperomia retusa* (L.f.) A.Dietr.

var. *bachmannii* (C.DC.) Düll

Similar to var. *retusa* but plants smaller (about 2-3 cm high), leaves usually less than 10 mm long. Inflorescence 9-25 mm long (including peduncle).

**Flowering:** July. **Habitat:** Similar to var. *retusa*. **Altitude:** c. 1800 m. **Distribution:** Malawi and Zimbabwe.

**Localities:** Thuchila Plateau, *Newman EI & Whitmore TC 211* (BM).

*Peperomia retusa* (L.f.) A. Dietr.

var. *mannii* (Hook.f.) Düll

Similar to var. *retusa* but leaves ovate to elliptic-lanceolate, up to 30 mm long. Inflorescence 30-60 mm long (including peduncle).

**Flowering:** August. **Habitat:** Similar to var. *retusa*. **Altitude:** c. 1800 m. **Distribution:** Widespread in tropical Africa to Mozambique and Zimbabwe.

**Localities:** Little Ruvo Plateau, *Newman EI & Whitmore TC 482* (BM).

*Peperomia rotundifolia* (L.) Kunth

Creeping, perennial, usually epiphytic herb. Leaves alternate, fleshy and round. Inflorescence spikes green and erect.

**Flowering:** October. **Habitat:** Riverine forest. **Altitude:** c. 900 m. **Distribution:** Widespread in tropical Africa and in South Africa.

**Localities:** Mulosa Stream, just above the Boma water intake at the entrance to the Crater, *Chapman JD 6556* (FHO).

*Peperomia tetraphylla* (Forst.) Hook. & Arn.

Creeping, succulent, perennial, often epiphytic herb. Leaves subsessile, rhomboid, 4-whorled. Inflorescence spikes green.

**Flowering:** July-August. **Habitat:** Stream-fringing forest, on mossy tree branches or rocks. **Altitude:** 1150-1400 m. **Distribution:** Widespread in Africa.

**Localities:** Phalombe River, below the gorge, *Chapman JD & Chapman EG 7875* (MO). Below the shelf of the Chiphalombe River Gorge, *Chapman JD & Chapman EG 7914* (MO). Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8739* (FHO).

*Piper capense* L.f.

Shrub, up to 5 m high. Crushed leaves very aromatic. Leaves ovate, rounded at the base.

Inflorescence of solitary, leaf-opposed spikes, creamy-white.

**Flowering:** September. **Fruiting:** May. **Habitat:** Shrub layer of evergreen forest. **Altitude:** 1100-1900 m. **Occurrence:** Common. **Distribution:** Widespread in Africa.

**Localities:** Mission cottage, Lichenya Plateau, *Chapman JD 522* (FHO). Lichenya Plateau, *Chapman JD 5663* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8062* (FHO). Muluzi River, above Chisambo, *Chapman JD & Chapman EG 8119* (MO).

*Piper umbellatum* L.

Soft-wooded, rambling shrub, up to 2 m high. Leaves subcircular to reniform, cordate at base. Inflorescences in umbels of 2-8, axillary spikes.

**Flowering:** December. **Habitat:** Stream-fringing forest. **Altitude:** c. 700 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Esperanza, *Chapman JD & Chapman EG 6909* (FHO).

## PITTOSPORACEAE

*Pittosporum viridiflorum* Sims

Evergreen tree, with a spreading, rounded crown, usually no more than 15 m high. Flowers greenish-cream, very fragrant. Fruits yellow when ripe, containing 4 shiny, red, sticky seeds. Seeds oily.

**Flowering:** November. **Fruiting:** December-August. **Habitat:** *Brachystegia* woodland, forest and forest edge, rocky river banks. **Altitude:** 850-2150 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa, extending into South Africa as far as the Cape.

**Localities:** Linji (Lichenya) Plateau, at the top of the Boma Path, *Chapman JD & Chapman EG 6978* (FHO). Thuchila Shelf, at Chisepu, *Chapman JD & Chapman EG 7588* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7696* (FHO). Phalombe River Valley, *Chapman JD & Chapman EG 7959* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8235* (FHO). Fort Lister Forestry Office to Sombani Plateau, *Chapman JD & Chapman EG 8755* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8952* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9219* (FHO).

## POACEAE

(Gramineae)

*Refs.* Clayton, 1969, 1979a & b; Cope, 1998 a. & b; Kabuye & Renvoize, 1975; Launert, 1973; Lin, 1974; Soderstrom & Ellis, 1982.

*Agrostis continuata* Stapf

Small, tufted grass, up to 70 cm high when flowering. Leaf lamina flat, tapering. Panicle spike-like.



**Flowering:** October. **Habitat:** Seepage areas and stream-sides. **Altitude:** c. 1800 m. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Thuchila Shelf, *Chapman JD & Tawakali EJ 5960* (FHO).

*Agrostis producta* Pilg.

Densely tufted, perennial grass, up to 1.2 m when flowering. Inflorescence loose with flexuous branches. Awn geniculate, up to 7.5 mm long.

**Flowering:** January-August. **Habitat:** Montane grassland, amongst rocks, at pathsides or stream silt. **Altitude:** c. 2200 m.

**Distribution:** From Sudan to Zimbabwe.

**Localities:** Little Ruo Divide, just south of Sombani, *Hilliard OM & Burt BL 6260* (K). Lichenya Plateau, *Robinson EA 5298* (K).

*Alloochaete geniculata* Kabuye

Tufted perennial grass, up to about 65 cm high with stems semi-procumbent. Lax inflorescence, spikelets straw-coloured tinged with purple.

**Flowering:** March-April. **Habitat:** Montane grassland, on shrubby hillsides and amongst rocky slabs. **Altitude:** c. 2000 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Path from Thuchila to Head of Ruo Basin, *Brummitt RK 9767* (K). 2 miles west of Lichenya forestry hut, *Phipps JB 2769* (K).

*Alloochaete gracillima* Kabuye

Tufted perennial grass, up to 70 cm high. Slender culms bulbous at the base. Contracted inflorescence, purple.

**Flowering:** March-April. **Habitat:** Moist, peaty soils among rocks at high altitude. **Altitude:** c. 2000 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Chambe Mt., *Phillips SM 56* (K).

*Alloochaete oreogena* Launert

Large tussock grass, up to 2.5 m high. Tussock sometimes has the appearance of a trunk for half its height from which the leaves droop outwards.

**Flowering:** May-September. **Habitat:** Montane grassland and steep rocky, high-altitude hillsides. **Altitude:** 1800-2000 m. **Occurrence:** Locally common. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Likulezi Valley, *Chapman JD 669* (K). Lichenya-Chambe Path below the North Peak, *Chapman JD 5682* (FHO, K). Lichenya Plateau, on the rocky slopes below the bluff, descending into the river gorge, *Chapman JD & Chapman EG 8507* (FHO). On the cliffs near the foot of the Manene extension overlooking Chisongeli forest, *Chapman JD & Chapman EG 9311* (FHO).

*Andropogon lima* (Hack.) Stapf

Tufted grass, up to 1 m high when flowering. Scabrid, erect leaves. Racemes usually in narrow, terminal pairs.

**Flowering:** March. **Habitat:** Damp, montane grassland. **Altitude:** c. 2100 m. **Occurrence:** Rare. **Distribution:** Cameroon, Sudan and Ethiopia south as far as Malawi.

**Localities:** Chambe Plateau, *Wiehe PO 318* (K).

*Andropogon mannii* Hook.f.

Small, delicate, perennial grass, up to 50 cm high when flowering. Racemes 1-5 in number, with tufts of white hairs at the raceme nodes.

**Flowering:** March. **Habitat:** Montane grassland, in shallow soil overlying rock. **Altitude:** 1600-2000 m. **Distribution :** West Tropical Africa, Sudan to South Africa.

**Localities:** Chambe Plateau, *Jackson, G 2184* (K).

*Andropogon schirensis* A.Rich.

Tufted grass, up to 60 cm in montane grassland but 1.5 m in woodland, when flowering. Reddish-brown bracts in inflorescence. Long awns.

**Flowering:** March-May. **Habitat:** Montane grassland and *Brachystegia* woodland. **Altitude:** 1000-2150 m. **Occurrence:** Occasional in grassland but more dominant in woodland. **Distribution :** Tropical Africa and South Africa.

**Localities:** Lichenya Hut, *Chapman JD 5603* (FHO). Likabula valley, *Chapman JD & Chapman EG 7295* (FHO). Lichenya Plateau, waste ground round house, *Robinson EA 5339* (K). Chambe Plateau, *Wiehe PO N/328* (K).

*Anthoxanthum ecklonii* (Nees) Stapf

Laxly tufted perennial grass, up to at least 45 cm high. Spikelets green, tinged purple.

**Flowering:** March-July. **Habitat:** Montane grassland and rocky terrain, often by pathsides. **Altitude:** c. 2200 m. **Occurrence:** Not common. **Distribution:** Mt. Mulanje, Malawi, mountainous areas in in South Africa (KwaZulu-Natal and Cape Province) and Lesotho.

**Localities:** Sombani to Madzeka, *Chapman JD & Patel IH 5716* (FHO). Near Thuchila Cottage, *Jackson G 1880* (K). Near the headwaters of the Lichenya River, *Phipps JB 2773* (K). Mt. Cilemba, *Robinson EA 5305* (K).

*Aristada recta* Franch.

Perennial grass, up to 30 cm high. Dense tuft of old, fibrous leaf bases at base of the plant. Awns of the lemmas up to 8 mm long, usually slightly spiralled at the base.

**Flowering:** November. **Habitat:** Montane grassland, in shallow depressions that become waterlogged during the rainy season. **Altitude:** c. 2100 m. **Distribution:** Widespread.

**Localities:** Chambe Plateau, *Wiehe PO N/330* (K).

*Brachiaria scalaris* Pilg.

Straggling annual grass, up to 60 cm high. Spikelets purple, in 1-2 irregular rows.

**Flowering:** May-July. **Habitat:** Disturbed ground, occurring as a weed in cleared secondary forest or in tea gardens. **Distribution:** From Ethiopia, south to Zimbabwe.

**Localities:** Mimosa, *Jackson G 588* (K). Thornwood, *Wiehe PO N/554* (K).



***Brachiaria umbellata* (Trin.) Clayton**

Perennial grass, up to about 10 cm high. Racemes bearing pedicellate spikelets singly on a slender rhachis.

**Flowering:** March. **Habitat:** Open evergreen forest. **Altitude:** c. 900 m. **Occurrence:** Locally dominant, forming a sward. **Distribution:** Malawi, Mozambique, Zimbabwe and southern Africa. **Comments:** Introduced to southern Africa. Planted as a lawn grass and as a cover plant in tea gardens but occurs as an escape in forest clearings.

**Localities:** Foot of Great Ruvo Gorge by the power station, *Brummitt RK & Banda EA 9199* (K).

***Brachypodium flexum* Nees**

Weakly erect perennial grass, up to 1 m high. Leaf lamina linear, dark green, tapering to a fine point. Inflorescence usually pendulous.

**Habitat:** Evergreen forest and streamsides. **Altitude:** c. 1800 m. **Occurrence:** Local. **Distribution:** Eastern side of Africa from Ethiopia to South Africa.

**Localities:** Chambe Basin, *Robinson EA 5342* (K).

***Bromus leptocladus* Nees**

Loosely tufted perennial grass, up to 1.5 m high. Leaves soft, broad, mid-green. Spikelets purple, in a large, open, drooping panicle.

**Flowering:** April-July. **Habitat:** Open cedar forest, semi-shaded streamsides and rocky slopes. **Altitude:** 1800-2100 m. **Occurrence:** Locally common. **Distribution:** East Africa, Malawi, Zimbabwe, South Africa (KwaZulu-Natal, Cape Province) and Lesotho.

**Localities:** Near top of path up to Sombani Basin from the Fort Lister Gap, *Brummitt RK 11320* (K). Path from Chambe hut to the Knife-Edge, *Phillips SM 63* (K). Lichenya Plateau, *Robinson EA 5268* (K). Chambe Basin, *Robinson EA 5344* (K).

***Digitaria debilis* (Desf.) Willd.**

Perennial grass, up to 40 cm high. Culms erect or creeping at the base. Inflorescence composed of 3-14 racemes along a short common axis.

**Flowering:** March. **Habitat:** Disturbed ground. **Altitude:** c. 1800 m. **Occurrence:** Common. **Distribution:** Widespread.

**Localities:** Near Lichenya forestry hut, *Phipps 2785* (K).

***Digitaria maitlandii* Stapf & C.E.Hubb.**

Small tussock grass, up to about 50 cm when flowering. Leaf lamina rolled at the margins to give the leaves a wiry appearance. Inflorescence composed of 3 racemes.

**Flowering:** December. **Habitat:** Montane grassland, especially on the drier, rocky hillocks. **Altitude:** 1950-2200 m. **Occurrence:** Locally common. **Distribution:** D.R. Congo, Rwanda, Burundi, East Africa, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Linji Plateau, *Chapman JD 6080* (FHO, K). Just south of the Sombani-Ruvo divide, *Hilliard OM & Burt BL 6259* (K).

***Digitaria milaniana* (Rendle) Stapf**

Rhizomatous perennial grass occasionally forming stolons. Culms up to 2 m high. Inflorescence 2-18 digitate racemes, erect to patent.

**Distribution:** From Ethiopia, Uganda and D.R. Congo to Namibia and South Africa.

**Localities:** Mt. Mulanje (no locality given), *Whyte A s.n.* (BM).

***Digitaria nitens* Rendle**

Tufted perennial grass with culms, up to 70 cm high. Bulbously thickened base surrounded by woolly cataphylls and old leaf sheath remains. Rhachis pale to purplish.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1500 m. **Occurrence:** Forming small, occasional groups of plants. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Path to Chambe Plateau, *Wiehe PO N/311* (K).

***Digitaria trinervis* Van der Veken**

Creeping, mat-forming short-lived perennial grass, up to 20 cm high. Inflorescence composed of 3-8, often branched racemes, dispersed along a short common axis.

**Flowering:** June. **Habitat:** Montane grassland. **Altitude:** 1200-1950 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya Plateau, *Robinson EA 5321* (K). Great Ruvo Gorge, *Robinson EA 5378* (K).

***Diheteropogon amplexans* (Nees) Clayton**

var. *catangensis* (Chiov.) Clayton

Grass, up to 3.5 m high when flowering. Inflorescence subtending long, bent awns. Anthers purplish-brown.

**Flowering:** April. **Habitat:** *Brachystegia* woodland, especially pathsides. **Altitude:** 850-1000 m. **Occurrence:** Locally abundant. **Distribution:** Tropical Africa and South Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 7413 & 9048* (FHO).

***Echinochloa colona* (L.) Link**

Annual grass with prostrate stems. No ligule. Inflorescence linear with up to three, short, neatly 4-rowed racemes.

**Flowering:** November. **Habitat:** Weed of tea gardens. **Distribution:** Widespread.

**Localities:** Mimosa, *Wiehe PO N/710* (K).

***Echinochloa crus-pavonis* (Kunth) Schult.**

Robust annual grass with culms up to 2 m long, prostrate at base. Spikelets purple.

**Flowering:** December. **Habitat:** Wet stream-sides. **Distribution:** Widespread.

**Localities:** Mimosa, *Jackson G 322* (K).



***Eragrostis caniflora* Rendle**

Tufted perennial grass, up to 45 cm high when flowering. Leaf lamina flat, pilose. Spikelets pale purple, hairy.

**Flowering:** August. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Occurrence:** Locally common. **Distribution:** Tanzania, Zambia, Malawi, Zimbabwe and Angola.

**Localities:** Sombani Plateau, *Chapman JD & Chapman EG 8758* (FHO).

***Eragrostis capensis* (Thunb.) Trin.**

Tufted perennial grass, up to 1.2 m high. Leaf lamina usually flat, sometimes loosely convolute. Inflorescence linear but not spiciform.

**Flowering:** November. **Habitat:** Montane grassland, on heavy soil. **Occurrence:** Occasional. **Distribution:** Widespread on the eastern side of Africa.

**Localities:** Chambe Plateau, *Wiehe PO N/326* (K).

***Eragrostis fastigiata* Cope**

Tufted perennial grass, up to 75 cm high. Fastigiatly branched above a single bare stem. Leaves tightly rolled and wiry.

**Flowering:** November, May. **Habitat:** Rock crevices and amongst rocks on open hillside. **Altitude:** 2000-2150 m. **Occurrence:** Local. **Distribution:** Endemic to Mt. Mulanje. **Localities:** Chambe Peak, *Chapman JD 5628* (FHO). Thuchila to Great Ruo Basin, *Hilliard OM & Burtt BL 6394* (K).

***Eragrostis hispida* K.Schum.**

Densely tufted perennial grass, up to 70 cm high. Leaves filiform. Spikelets clustered at the tips of the primary inflorescence branches.

**Flowering:** April-June. **Habitat:** Montane grassland, in shallow soil of wet flushes. **Altitude:** 2100-2250 m. **Distribution:** Sudan to Angola.

**Localities:** Sombani Basin, *Brummitt RK 11260* (K). On ridge leading to Chambe Peak, *Phillips SM 54* (K).

***Eragrostis homblei* De Wild.**

Coarsely tufted perennial grass, up to 90 cm high. Inflorescence over 15 cm long, with slender, flexuous branches and pedicels. Spikelets grey-green. Rhachilla dark olive-green or purplish-green, not concealed.

**Flowering:** March. **Habitat:** Grassland amongst bracken and shrubs. **Distribution:** D.R. Congo, Tanzania, Zambia and Malawi.

**Localities:** Chambe Plateau, *Jackson G 2176* (K).

***Eragrostis nindensis* Ficalho & Hiern**

Tufted perennial grass, up to 50 cm high. Culms erect, unbranched. Leaves filiform, rarely flat. Inflorescence with stiffly spreading lateral branches.

**Flowering:** March. **Habitat:** Montane grassland, especially along pathsides. **Altitude:** c. 1900 m. **Occurrence:** Locally common. **Distribution:** From the D.R.

Congo and Tanzania to South Africa.

**Localities:** Above Madzeka Hut, on the Sombani path, *Chapman JD & Chapman EG 8373* (K).

***Eragrostis racemosa* (Thunb.) Stapf**

Tufted perennial grass, up to 90 cm high. Basal leaf sheaths glabrous or thinly silky-pilose. Leaf lamina flat. Spikelets laterally compressed.

**Flowering:** May, November. **Habitat:** Montane grassland, especially on path sides and fire belts. **Altitude:** c. 2100 m. **Occurrence:** Locally common. **Distribution:** D.R. Congo and Sudan to South Africa.

**Localities:** Thuchila Shelf, *Chapman JD & Patel IH 5764* (K). Chambe Plateau, *Wiehe PO N/316* (K).

***Eragrostis sylviae* Cope**

Tufted perennial grass, up to 35 cm high. Basal leaf sheaths glabrous. Inflorescence less than 10 cm long, branches and pedicels stiff, straight or wavy. Rhachilla olive-green, concealed.

**Flowering:** April. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Path from Chambe Knife-Edge to Chisepu shelter, *Phillips SM 68* (K).

***Eragrostis volkensii* Pilg.**

Tufted perennial grass, up to about 50 cm high but can be more. Stems wiry. Leaves all cauline, reflexed. Inflorescence open, spikelets flattened.

**Flowering:** December-May. **Habitat:** Fire traces, pathsides and bare bauxite patches in montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Fairly widespread on Mulanje. **Distribution:** Tropical Africa and South Africa.

**Localities:** In Ruo and Thuchila areas and widespread elsewhere on the mountain, *Chapman JD 692* (K). Thuchila Plateau, *Chapman JD 5678* (FHO). The old airstrip, on the Linji Plateau (north end of the Lichenya Plateau), *Chapman JD 6052* (FHO, K). Slope facing Chambe mountain, *Phillips SM 59* (K).

***Eriochrysis purpurata* (Rendle) Stapf**

Perennial tussock grass, up to 75 cm high. Narrow, linear leaves, very hairy. Culms glabrous, upper part reddish. Inflorescence creamy-brown, silky feel.

**Flowering:** October. **Habitat:** Montane grassland in damp, peaty soil over rock. **Altitude:** c. 1900 m. **Occurrence:** Locally common. **Distribution:** Tanzania, Zambia, Malawi, Zimbabwe and Angola.

**Localities:** Lichenya Plateau, *Greenway PJ 6305* (K).

***Exothea abyssinica* (A.Rich.) Andersson**

Tufted grass, up to 1.2 m when flowering. Inflorescence a pair of shortened racemes. Distinctive stiff, long, yellow awns.



**Flowering:** May. **Habitat:** Montane grassland. **Altitude:** c. 1800 m. **Occurrence:** Frequently the dominant species both in burnt and unburnt grassland. **Distribution:** Sudan and Ethiopia to Zambia and Malawi. **Localities:** Lichenya Hut, *Chapman JD 5601* (FHO).

*Festuca abyssinica* A.Rich.

Tufted, perennial grass, up to 60 cm high. Culms geniculately ascending. Inflorescence spike-like, branches short, appressed to rhachis.

**Flowering:** March-June. **Habitat:** Montane grassland, often on pathsides or bare ground. **Altitude:** 1750-1900 m. **Occurrence:** Not common. **Distribution:** Cameroon, Ethiopia, Uganda, Kenya, Tanzania, Zambia, Malawi and Mozambique. **Localities:** Path from Chambe Hut to the Knife-Edge, *Philipps SM 62* (K). Near Lichenya forestry hut, *Phipps JB 2754* (K). Lichenya Plateau, waste ground around the hut, *Robinson EA 5335* (K).

*Festuca africana* (Hack.) Clayton

Syn. *Pseudobromus silvaticus* K. Schum.; *Pseudobromus africanus* (Hack.) Stapf

Tufted perennial grass, up to 2 m high. Leaves dark green. Inflorescence lax, drooping, with slender rhachis.

**Flowering:** May, December. **Habitat:** Forest, especially along paths and beside streams. **Altitude:** 1800-2000 m. **Occurrence:** Locally abundant. **Distribution:** Sudan, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique and South Africa. **Localities:** 1 km south of Thuchila Hut, *Brummitt RK 9740* (K). Lichenya Plateau, *Chapman JD 5655* (FHO). Linji Plateau, *Chapman JD 6082* (FHO). Lichenya Plateau, along the Nessa Path, *Chapman JD & Chapman EG 8509* (FHO).

*Festuca costata* Nees

Robust, dense, tussock grass, up to 2 m high when flowering. Leaf lamina glabrous, ribbed, rolled at edges. Spikelets pale purplish-green.

**Flowering:** October-December. **Habitat:** Montane grassland, streambanks, sides and along valley bottoms. **Altitude:** 1800-2100 m. **Occurrence:** Locally frequent. **Distribution:** Eastern Africa from Kenya to South Africa (Transvaal, KwaZulu-Natal), Swaziland and Lesotho.

**Localities:** Lichenya Plateau, *Chapman JD 6055* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8907* (FHO).

*Helictotrichon milanjanum* (Rendle) C.E.Hubb.

Tufted perennial grass, up to 1.25 m when flowering. Spikelets green, tinged dark purple. Awns straight when green, drying bent.

**Flowering:** March-July. **Habitat:** Open forest, damp areas. **Altitude:** c. 2000 m. **Distribution:** Ethiopia, East Africa, D.R. Congo and Malawi.

**Localities:** Near headwaters of the Lichenya River, *Phipps JB 2772* (K). Lichenya Plateau, *Robinson EA 5308* (K).

*Hyparrhenia cymbaria* (L.) Stapf

Robust perennial grass, up to 1 m high. Leaf lamina dull green, rough. Spatheoles boat-shaped, turning red at maturity.

**Flowering:** November. **Habitat:** Among *Aframomum* at edge of riverine forest. **Altitude:** c. 1000 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Lower slopes along the Chitakali Stream, *Chapman JD & Chapman EG 6850* (FHO).

*Hyparrhenia filipendula* (Hochst.) Stapf

Tufted perennial grass up to 2 m high in woodland and 3 m along roadsides. Slender, graceful inflorescences, awns up to 6 cm long with hairy column.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1000 m. **Occurrence:** Common. **Distribution:** Throughout tropical Africa but mainly in the east, South Africa and Swaziland.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 7445 & 9040* (FHO).

*Hyparrhenia finitima* (Hochst.) Stapf

Tufted perennial grass, up to 2 m high. Fairly dense panicle, spatheoles pinkish-red, awns up to 4 cm long.

**Flowering:** May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Common. **Distribution:** **Localities:** Phalombe area, lower slopes of Mulanje and Mchese Mts., *Chapman JD 649* (K). Likabula Valley, *Chapman JD & Chapman EG 8495* (FHO).

*Hyparrhenia newtonii* (Hack.) Stapf

Perennial grass, up to 2 m high in woodland but as much as 3 m high by the roadside. Leaf blades pale green, narrow, rough. Dark purple awns, up to 4 cm long.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** Widespread in tropical Africa, South Africa (Transvaal), Swaziland and Madagascar. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 9041* (FHO).

*Hyparrhenia rudis* Stapf

Robust tufted perennial grass, up to 2 m high. Leaf blades pale green to glaucous, rough. Spatheoles narrowly lanceolate, glabrous or slightly hairy, turning reddish at maturity. Awns c. 4 cm long.

**Flowering:** April. **Habitat:** Woodland. **Altitude:** c. 950 m. **Localities:** **Distribution:** Widespread in tropical Africa, especially south tropical Africa. Likabula Valley, *Chapman JD & Chapman EG 7446* (FHO).

*Hyparrhenia variabilis* Stapf

Robust perennial grass, up to 3 m high. Spatheoles, up to 2.4 cm long, boat-shaped, russet-red tinged with yellow and green at maturity. Awns 1.8-3.2 cm long.

**Flowering:** June. **Habitat:** *Brachystegia* woodland. **Occurrence:** Common, often occurring in large, pure stands.



**Distribution:** Down the eastern side of Africa from Ethiopia to South Africa (Transvaal).

**Localities:** Mulanje, *Chapman JD 651* (K).

*Hyparrhenia welwitschii* (Rendle) Stapf

Grass up to 3 m high. Leaf blades glaucescent, glabrous. Spatheoles purple. Racemes reflexed. Awns pale greenish-purple, up to 7 cm long.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** Widespread in tropical Africa. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 9043* (FHO).

*Hyperthelia dissoluta* (Nees ex Steud.) Clayton  
Syn. *Hyparrhenia dissoluta* (Nees ex Steud.) C.E.Hubb.

Perennial tufted grass, up to 3 m high. Spatheoles long, pale green tinged with purple. Awns stout, twisted, yellow, up to 8 cm long.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900-1000 m. **Occurrence:** Sporadic. **Distribution:** Tropical Africa and South Africa. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 7411 & 9050* (FHO).

*Imperata cylindrica* (L.) Raeusch.

Rhizomatous perennial grass, up to 1.2 m high. Leaf blades flat, up to 2 cm wide, stiffly erect and sharp edged. Inflorescence cylindrical, obscured by copious, silky, white hairs.

**Fruiting:** December. **Habitat:** *Eucalyptus* plantation. **Altitude:** c. 650 m. **Distribution:** Throughout tropical Africa. **Localities:** Mt. Mulanje foot, *Chapman JD & Chapman EG 8303* (MO).

*Isachne mauritiana* Kunth

Rambling perennial grass, up to 60 cm high. Culms geniculately ascending from a prostrate base.

**Flowering:** June, September. **Habitat:** Forest. **Altitude:** c. 1000 m. **Occurrence:** Common. **Distribution:** From Mozambique and Zimbabwe northwards to Kenya and Ghana. **Localities:** Upper Likulezi Valley, *Chapman JD 687* (K). Ruu Gorge, *Müller T 1490* (K).

*Ischaemum afrum* (J.F.Gmel.) Dandy

Grass growing in clumps, up to 1.2 m high when flowering. Inflorescence digitate with 3 racemes, green with purple tips to bracts, hairy.

**Flowering:** May. **Habitat:** In crevices of a rocky river bank, often submerged. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Nigeria to Ethiopia and south to South Africa. **Localities:** Likabula Valley, Mulanje foot, *Chapman JD & Chapman EG 8470* (FHO, MO).

*Koeleria capensis* (Steud.) Nees

Small tussock grass, up to 60 cm high when

flowering. Wiry stems and filiform leaves. Old leaf-bases, often charred, massed at the base.

**Flowering:** October-December. **Habitat:** Montane grassland. **Altitude:** 1800-2100 m. **Occurrence:** Sporadic. **Distribution:** From Cameroon and Ethiopia southwards to South Africa (Cape Province). **Localities:** Thuchila Shelf, *Chapman JD 5971* (FHO). Linji Plateau, *Chapman JD 6077* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8246* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8906* (FHO).

*Loudetia phragmitoides* Hochst.

Robust perennial grass forming clumps, up to 2.5 m high. Orange-brown, plume-like inflorescences.

**Flowering:** June-August. **Habitat:** Seepage areas on river banks. **Altitude:** c. 1350 m. **Distribution:** Senegal and Sudan southwards as far as Angola and Mozambique. **Localities:** Chiphalombe Stream, *Chapman JD & Chapman EG 7915* (FHO). Western slopes of Mchese Mt., *Chapman JD & Chapman EG 8590* (FHO).

*Loudetia simplex* (Nees) C.E.Hubb.

Tufted perennial grass, up to 150 cm high. Inflorescence fairly loose and linear, becoming reddish-brown when mature.

**Flowering:** December-May. **Habitat:** *Brachystegia* woodland and bare soil in montane grassland, often on fire-traces. **Altitude:** 1000-1900 m. **Occurrence:** Locally dominant. **Distribution:** Tropical Africa and South Africa. **Localities:** Lichenya Hut, *Chapman JD 5602* (FHO). Linji Plateau, *Chapman JD 6071* (FHO). Likabula Valley, Chapaluka track, *Chapman JD & Chapman EG 7355* (FHO, MO). Likabula Valley, *Chapman JD & Chapman EG 9042* (FHO).

*Melinis minutiflora* Beauv.

Tufted perennial grass, up to 1 m high, weak-stemmed, frequently procumbent. Leaf sheaths hairy, sticky.

**Flowering:** May. **Habitat:** Forest edge. **Altitude:** c. 1450 m. **Occurrence:** Locally abundant. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** Mulanje base, below the Chambe cliffs, *Chapman JD & Chapman EG 7611* (FHO).

*Melinis nerviglumis* (Franch.) Zizka

Densely tufted, erect perennial grass, up to 1.5 m high. Narrow setaceous leaf lamina. **Habitat:** Montane grassland. **Altitude:** 1890-2030 m. **Distribution:** Widespread. **Localities:** Between Chambe and Chisepu, *Leach LC 14951* (K). Lichenya Plateau, *Robinson EA 5316* (K).

*Melinis repens* (Willd.) Zizka var. *repens*

Perennial grass, up to 1.2 m high. Spikelets densely hairy. **Flowering:** April-May. **Habitat:** *Brachystegia* woodland, usually at roadsides. **Altitude:** 900-1000 m. **Occurrence:** Occasional. **Distribution:** Throughout Africa.



**Localities:** Likabula Valley, Mulanje foot, *Chapman JD & Chapman EG 8518* (FHO, K). Likabula Valley, *Chapman JD & Chapman EG 9044* (FHO).

***Microchloa altera* (Rendle) Stapf**

Syn. *Rendlia altera* (Rendle) Chiov.

Densely tufted perennial grass, up to 50 cm high. Fine leaves, mass of leaf bases at base of clump. Spikelets of inflorescence on one side of rhachis, purplish.

**Flowering:** September-October. **Habitat:** Montane grassland. **Altitude:** c. 2100 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Zimbabwe and South Africa.

**Localities:** Sombani Basin, *Chapman JD & Chapman EG 8910* (FHO). Lichenya Plateau, *Robinson EA 5314* (K).

***Monocymbium ceresiiforme* (Nees) Stapf**

Perennial, tufted grass, up to 50 cm high. Leaves often purplish. Spatheoles orange-brown.

**Flowering:** May. **Habitat:** Montane grassland, often in association with *Loudetia simplex*. **Occurrence:** Locally common. **Distribution:** Tropical Africa and South Africa.

**Localities:** Sombani Hut, *Chapman JD & Patel IH 5690* (FHO).

***Olyra latifolia* L.**

Stout, cane-like grass, up to 3 m high. Leaf lamina ovate, glaucous, contracted into a short, hairy pseudopetiole.

**Flowering:** October. **Habitat:** Forest. **Altitude:** c. 850 m. **Occurrence:** Common. **Distribution:** Throughout tropical Africa.

**Localities:** Lichenya F.R. beside the Lichenya River, T.A. Mabukas, Milonde Court, *Chapman JD 6596* (FHO). Mulanje foot at Nakolu Stream, below Manga Peak, *Chapman JD 6726* (FHO).

***Oplismenus hirtellus* (L.) Beauv.**

Creeping perennial grass, up to 100 cm high when flowering. Leaf lamina lanceolate to narrowly ovate.

**Habitat:** Forest. **Altitude:** 900-1800 m. **Distribution:** Throughout the tropics, except Asia.

**Localities:** Crater Gorge forest, Little Mulosa River, *Chapman JD 6649* (FHO). Near Lichenya Forestry Hut, *Phipps JB 2751* (K).

***Oplismenus undulatifolius* (Ard.) Roem. & Schult.**

Creeping perennial grass, with culms, up to 50 cm long. Spikelets laterally compressed. Awns smooth and sticky.

**Flowering:** June. **Habitat:** Evergreen forest. **Altitude:** c. 1300 m. **Distribution:** Uplands of Africa.

**Localities:** Ruo Gorge, *Robinson EA 5370* (K).

***Oreobambos buchwaldii* K.Schum.**

Large bamboo, up to 20 m high, forming clumps. Leaf lamina lanceolate to oblong-lanceolate, pale green and somewhat glaucous. Culms dark green. Inflorescences long and narrow, composed of opposite clusters of spikelets.

**Flowering:** August-October. **Habitat:** Forest and forest edge. **Altitude:** 1100-1500 m. **Distribution:** Uganda, Tanzania, Zambia and Malawi. **Comments:** Clumps showing no sign of dying back at flowering.

**Localities:** Above Esperanza, along the upper reaches of the Mpamba Stream, *Chapman JD & Chapman EG 6704* (FHO). Chiphalombe forest, *Chapman JD & Chapman EG 7987* (FHO).

***Oxytenanthera abyssinica* (A.Rich.) Munro**

Robust bamboo growing in clumps, up to 16 m high. Spikelet clusters globose, spiny.

**Habitat:** Riparian forest. **Altitude:** c. 1500 m. **Distribution:** Senegal to Ethiopia, East Africa and south to Zimbabwe and Mozambique. **Comments:** Clumps die back after flowering.

**Localities:** Naminjiwa Stream, Mchese Mt., *Chapman JD 596* (FHO).

***Panicum aequinerve* Nees**

Small, annual or short-lived perennial grass, up to 70 cm high. Delicate, trailing culms. Inflorescence with sparse, spreading branches.

**Flowering:** June. **Habitat:** Forest edge. **Altitude:** c. 2000 m. **Localities:** Lichenya Plateau, *Robinson EA 5310* (K). **Distribution:** Ethiopia to South Africa, but principally a South African species. It only seems to occur on Mt. Mulanje in Malawi.

**Localities:** Naminjiwa Stream, Mchese Mt., *Chapman JD 596* (FHO).

***Panicum brevifolium* L.**

Semi-procumbent, annual grass, up to 40 cm high, rooting at the nodes. Leaf lamina ovate with a long drawn-out acuminate tip. Inflorescence a much-branched, tangled panicle.

**Flowering:** March. **Habitat:** Forest and *Eucalyptus* plantations. **Altitude:** c. 800 m. **Occurrence:** Common. **Distribution:** Throughout the Old World tropics.

**Localities:** Mulanje foot, Esperanza, *Chapman JD & Chapman EG 7367* (FHO). Mimosa, *Jackson G 587* (K). Lujeri, *Wiehe PO N/709* (K).

***Panicum ecklonii* Nees**

Tufted perennial grass usually densely pubescent at the base. Leaves mostly basal, pilose. Inflorescence purple.

**Flowering:** November-January. **Habitat:** Wetter areas of montane grassland. **Altitude:** c. 2150 m. **Occurrence:** Occasional and locally common. **Distribution:** Through most of tropical Africa and South Africa.

**Localities:** Just south of Sombani-Little Ruo divide, *Hilliard OM & Burt BL 6258* (K). Chambe Plateau, *Wiehe PO 315* (K).



***Panicum eickii* Mez.**

Small perennial grass, with culms up to 30 cm high. Inflorescence sparsely branched, branches contracted.

**Flowering:** November. **Habitat:** Montane grassland, forming carpets in moist, shady situations. **Altitude:** c. 2100 m. **Distribution:** Tanzania (Usambara & Uluguru Mts.), Malawi (Mt. Mulanje) and Zimbabwe (Chimanimani Mts.). **Localities:** Chambe Plateau, *Wiehe PO N/344* (K).

***Panicum inaequilatum* Stapf & C.E.Hubb.**

Scrambling, weak-stemmed grass. Culms up to 60 cm high. Lanceolate leaf lamina. Delicate, sparsely-branched inflorescence.

**Flowering:** October. **Habitat:** Amongst bracken on open slopes. **Altitude:** 1050-2200 m. **Distribution:** S. Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Top of Lichenya path, above C.C.A.P. hut, *Brummitt RK & Polhill RM 15948* (K). Crater Gorge, below Manga Peak, *Chapman JD 6655* (FHO). Path from Chambe to Knife-Edge, *Phillips SM 61* (K).

***Panicum maximum* Jacq.**

Tufted perennial grass, up to 3 m high. Inflorescence delicate, pyramidal, the lower branches arranged in whorls.

**Flowering:** April. **Habitat:** *Brachystegia* woodland, by the roadside. **Altitude:** 650-1000 m. **Distribution:** Tropical and South Africa.

**Localities:** Below Mt. Mulanje, near the Boma at Malawi Tea Factory, *Chapman JD & Chapman EG 7481* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9049* (FHO).

***Panicum monticolum* Hook.f.**

Semi-procumbent grass with slender culms up to 1 m long. Leaf lamina lanceolate to ovate.

**Flowering:** May. **Habitat:** Forest. **Distribution:** Throughout tropical Africa.

**Localities:** Lichenya Plateau, *Chapman JD 5656* (FHO, K).

***Panicum nymphoides* Renvoize**

Small, short-lived grass, up to 10 cm high. Culms erect, delicate, unbranched.

**Flowering:** February, April. **Habitat:** High altitude, in wet areas amongst moss and rocks. **Altitude:** c. 2100 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Thuchila Plateau to Great Ruo Basin, *Hilliard OM & Burt BL 6396* (K). Path from Chambe Knife-Edge to Chisepu shelter, *Phillips SM 66* (K).

***Panicum wiehei* Renvoize**

Annual grass with straggling culms, up to 1 m long. Inflorescence moderately to much branched.

**Flowering:** April-June. **Habitat:** Evergreen forest. **Altitude:** 800-2000 m. **Distribution:** Sudan to Zimbabwe.

**Localities:** On Knife-Edge above Chambe Hut, *Phillips SM 65* (K). Great Ruo Gorge, *Robinson EA 5368* (K).

***Paspalum conjugatum* P.J.Bergius**

Creeping, perennial grass with culms reaching 60 cm high. Inflorescence of paired racemes, the spikelets borne single in 2 rows on a narrow rhachis.

**Flowering:** June. **Habitat:** Forest clearings. **Altitude:** c. 800 m. **Distribution:** Widely introduced throughout the tropics.

**Localities:** Ruo Gorge, *Robinson EA 5393* (K).

***Pennisetum macrourum* Trin.**

Reed-like perennial grass, up to 60 cm high. Leaf lamina usually flat, sometimes rolled. Inflorescence linear, purplish.

**Flowering:** April-May. **Habitat:** Rivers beds and river banks. **Altitude:** 900-2000 m. **Distribution:** From Sudan and Ethiopia to South Africa.

**Localities:** N.W. slopes of Ruo Basin, *Brummitt RK 9718* (K). Likabula Valley at the Satwi Stream, on the Lichenya path, *Chapman JD & Chapman EG 8503* (FHO). Ruo Gorge, *Müller T 1471* (K). Chisambo, *Müller T 1520* (K). Ruo Gorge, *Müller T 1471* (K). Lichenya Plateau, *Robinson EA 5332* (K).

***Pennisetum polystachion* (L.) Schult.**

Annual or perennial grass, up to 2 m high when flowering. Copiously branched. Inflorescence linear, rhachis angular with sharp, decurrent wings.

**Habitat:** Arable or disturbed ground. **Distribution:**

**Localities:** Along water pipe to Chisambo, *Msiska HG 221* (K).

***Pennisetum sphacelatum* (Nees) Dur. & Schinz**

Densely tufted perennial grass, up to 1.5 m when flowering. Narrow, stiff, linear leaves. Linear inflorescence, green tinged with purple.

**Flowering:** May-July. **Habitat:** Montane grassland. Also found rooted between rocks on bank. **Altitude:** 850-2200 m.

**Occurrence:** Locally common. **Distribution:** From Ethiopia to South Africa.

**Localities:** Path from Thuchila Hut to head of Ruo Basin, *Brummitt RK 9643* (K). Sombani, *Chapman JD 5693* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8473* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 8498* (FHO). Just south of Sombani-Ruo divide, *Hilliard OM & Burt BL 6262* (K). Side of Chambe Mt, *Phillips SM 52* (K).

***Pentaschistis natalensis* Stapf**

Densely tufted perennial grass, up to 70 cm high. Soft, very narrow leaves. Very loose, open inflorescence.

**Flowering:** April-May. **Habitat:** Montane grassland, between rocks and on streambanks. **Altitude:** c. 2100 m.

**Occurrence:** Common. **Distribution:** Malawi, Zimbabwe and South Africa (KwaZulu-Natal).

**Localities:** Thuchila Shelf, Chisepu, *Chapman JD & Chapman EG 7584* (FHO). Sombani to Chinzama, *Chapman JD & Patel IH 5698* (FHO, K).



*Phragmites mauritianus* Kunth

Robust perennial grass with red, cane-like culms, up to 5 m high. Inflorescence a white plume.

**Flowering:** July. **Habitat:** Streambanks. **Altitude:** c. 1000 m. **Distribution:** Throughout tropical Africa and South Africa (KwaZulu-Natal).

**Localities:** Western foot of Mchese Mt., Nantali Stream, *Chapman JD & Chapman EG 8722* (FHO).

*Poa leptoclada* A.Rich.

Loosely tufted perennial grass, with culms up to 75 cm high, geniculate ascending. Inflorescence narrow, with erect branches almost appressed to the rhachis. Spikelets densely clustered.

**Flowering:** June. **Habitat:** Montane grassland, on disturbed ground. **Altitude:** c. 1900 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Lichenya Plateau, on waste ground around the forestry hut, *Robinson EA 5320* (K).

*Poecilostachys oplismenoides* (Hack.) Stapf

Decumbent perennial grass with culms, up to 1 m long. Wide, lanceolate leaves. Lax inflorescence, spikelets laterally compressed.

**Flowering:** July. **Habitat:** Evergreen forest. **Altitude:** c. 1200 m. **Distribution:** From Mozambique and Zimbabwe northwards to Ethiopia and Nigeria.

**Localities:** Ruo Gorge path, *Robinson EA 5373* (K).

*Pseudechinolaena polystachya* (Kunth) Stapf

Low creeping annual grass, often with aerial roots at the nodes. Spikelets laterally compressed, eventually armed with hooks.

**Flowering:** July. **Habitat:** Forest. **Altitude:** c. 750 m. **Distribution:** Throughout the tropics.

**Localities:** Mr. Henry Brown's Jungle, Eldorado-Lujeri area, *Chapman JD 726* (K).

*Rytidosperma davyi* (C.E.Hubb.) Cope

Syn. *Danthonia davyi* C.E.Hubb.; *Merxmuellera davyi* (C.E.Hubb.) Conert

Tussock grass with drooping leaves giving a domed effect. Tussocks usually about 70 cm high when flowering, although may reach over 1 m in height and 1.5 m in width. Leaf lamina tightly rolled longitudinally.

**Flowering:** September-December. **Habitat:** Unburnt montane grassland and stream banks. **Altitude:** 1800-2150 m. **Occurrence:** Sporadic or locally common. **Distribution:** S. Malawi, C. Mozambique and E. Zimbabwe. **Comments:** This grass is used locally to make brushes.

**Localities:** Thuchila Shelf, *Chapman JD 5966* (FHO). Linji Plateau, *Chapman JD 6079* (FHO). Lichenya Plateau, near the Linji Stream, *Chapman JD & Chapman EG 8245* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8905* (FHO). Big Ruo Basin, *Chapman JD & Chapman EG 9378* (FHO). Minunu, at the south end of Big Ruo Basin, *Chapman JD & Chapman EG 9402* (FHO).

*Schizachyrium platyphyllum* (Franch.) Stapf

Erect or scrambling annual, up to 120 cm high when flowering. Leaf lamina keeled, leaf sheaths both longer and shorter than the internodes.

**Flowering:** August. **Habitat:** Evergreen forest. **Distribution:** Senegal to Sudan, D.R. Congo, Uganda, Kenya, Tanzania, Malawi and Mozambique.

**Localities:** Ruo River, *Jackson G 591* (K).

*Setaria megaphylla* (Steud.) Dur. & Schinz

Tufted perennial grass often forming clumps but the base not noticeably clothed in dead leaf-sheaths. Culms up to 3 m high. Leaf lamina 5-110 mm wide

**Habitat:** Closed woodland. **Altitude:** c. 650 m. **Distribution:** Tropical Africa and South Africa.

**Localities:** Mimosa Tea Research Station at the Segregation Plot, *Chapman JD & Chapman EG 8421* (K, MO).

*Setaria petiolata* Stapf & C.E.Hubb.

Loosely tufted annual grass, up to 80 cm high with semi-procumbent culms. Leaf lamina broadly linear, those on the lower stem narrow to a false petiole.

**Flowering:** March. **Habitat:** Edge of track in *Eucalyptus* plantation. **Altitude:** c. 800 m. **Occurrence:** Locally common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Mulanje foot, Esperanza, *Chapman JD & Chapman EG 7369* (FHO).

*Setaria sphacelata* (Schumach.) Moss

var. *sericea* Clayton

Tufted perennial grass, up to 1.5 m high when flowering. Culms slender, 4-16-noded. Leaf lamina up to 10 mm wide. Inflorescence cylindrical.

**Flowering:** March. **Habitat:** Grassy floodbanks of forest streams. **Altitude:** c. 1700 m. **Occurrence:** Frequent. **Distribution:** Tropical Africa and South Africa.

**Localities:** By tributary of the Lichenya River, near the forestry hut, *Phipps JB 2759* (K).

*Sporobolus mauritianus* (Steud.) Dur. & Schinz

Tufted perennial grass, up to 1 m high. Leaves rolled or folded. Branches of the inflorescence in whorls. Spikelets very dark bronze-green.

**Flowering:** March. **Habitat:** Shallow peaty soils in rocky places. **Distribution:** Throughout tropical Africa and in South Africa.

**Localities:** Chambe Plateau, *Jackson G 2185* (K).

*Sporobolus piliferus* (Trin.) Kunth

Small annual grass, up to 45 cm high. Inflorescence linear and spiciform with branches in whorls. Spikelets reddish-brown.



**Flowering:** March-April. **Habitat:** Montane grassland beside paths or among rocks. **Altitude:** 1850-2000 m. **Distribution:** Throughout the tropics. **Localities:** Just above Thuchila Hut, *Brummitt RK 9688* (K). Path from Chambe hut to Knife-Edge, *Phillips SM 60* (K).

*Stereochlaena cameronii* (Stapf) Pilg.

Tufted, perennial grass, with procumbent culms up to 100 cm long. Inflorescence a digitate raceme, purplish-green with awns up to 2 cm long.

**Flowering:** February-May. **Habitat:** In disturbed soil especially on fire traces and path sides. **Altitude:** 1000-2000 m. **Occurrence:** Locally very common. **Distribution:** Tanzania to South Africa (Transvaal).

**Localities:** Near Lichenya Hut, *Chapman JD 5613* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 7197* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9045* (FHO).

*Themeda triandra* Forssk.

Tufted perennial grass, up to 2 m high. Inflorescences spatheolate, the panicle bearing groups of racemes in fan-shaped units. Spatheoles purplish-orange. Awns dark brown, up to 5 cm long.

**Flowering:** December. **Habitat:** Montane grassland, *Brachystegia* woodland. **Altitude:** c. 2000 m. **Occurrence:** Fairly common. **Distribution:** Widespread.

**Localities:** Linji Plateau, near C.C.A.P. cottage, *Chapman JD 6078* (FHO).

*Trichopteryx fruticulosa* Chiov.

Perennial grass, up to 80 cm high. Stiffly erect. Leaf sheaths cover the nodes. Spikelets brown.

**Flowering:** June-July. **Habitat:** Rocky slopes. **Altitude:** c. 1250 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Angola.

**Localities:** Thuchila River Valley, *Jackson G 1869* (K). Great Ruu Gorge, *Robinson EA 5383* (K).

*Yushania alpina* (K.Schum.) W.C.Lin

Syn. *Arundinaria alpina* K.Schum.

Bamboo growing to 10-13 m high. The new culms are bluish-green when the culm sheath falls off.

**Habitat:** Forest and forested ravines. **Altitude:** c. 1800 m. **Distribution:** Cameroon, Ethiopia, Sudan, D.R. Congo, Rwanda, East Africa and Malawi. **Comments:** This bamboo has never been found flowering on Mt. Mulanje, therefore its specific determination remains doubtful. Comparison with the South African species *Thamnocalamus tessellatus* (Nees) Soderstr. & R.P. Ellis (syn. *Arundinaria tessellata* (Nees) Munro) would be useful.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 9475* (FHO).

PODOCARPACEAE

*Podocarpus henkelii* Stapf

Tree, up to 30 m high, with a greyish-brown bark. Leaves linear and slightly curved. Male cones solitary or paired, pink. Female cones solitary. Receptacle leathery at maturity, inconspicuous.

**Habitat:** Montane forest. **Altitude:** c. 1400 m. **Distribution:** Tanzania (W. Usambara and Uluguru Mts.), Malawi, South Africa. **Comments:** This is the only collection from the Mulanje massif and is from a young tree. It could be a juvenile *P. latifolius*.

**Localities:** Mchese Mt., Mbawa Valley, *Chapman JD & Chapman EG 9198* (FHO).

*Podocarpus latifolius* (Thunb.) R.Br. ex Mirb.

Tree, up to 27 m high with a reddish bark, flaking in long pieces. Leaves very shortly petiolate, linear, coriaceous. Male cones long, deep pink. Female cones solitary. At maturity, they are purple and fleshy.

**Flowering:** August, December. **Fruiting:** August. **Habitat:** Riparian, montane and mid-altitude forest. **Altitude:** 1300-2450 m. **Occurrence:** Common. **Distribution:** Cameroon, S.E. Nigeria and eastern Africa from Sudan to the Cape Peninsula.

**Localities:** Below the West Peak, *Chapman JD 329* (FHO). Chambe Saddle to Lichenya, *Chapman JD 5647* (FHO). Outer slopes of Mulanje, where the Boma Path crosses the Chitakali Stream, *Chapman JD & Chapman EG 6869* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8079* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 8874* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9204* (FHO). Mchese Mt., Mbawa Stream, *Chapman JD & Chapman EG 9259* (FHO).

PODOSTEMACEAE

*Sphaerotherylax algiformis* Bisch. ex Krauss

Submerged or partially submerged herb to 12 cm long, forming carpets of vegetation. Leaves filiform. Flowers each enclosed by a bract, in axillary clusters.

**Flowering:** May. **Habitat:** Stream beds in swift-flowing water. **Altitude:** c. 1300 m. **Occurrence:** Locally common. **Distribution:** Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal, Cape Province).

**Localities:** Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 9540* (FHO).



## POLYGALACEAE

### *Muraltia flanaganii* Bolus

Low shrub, up to 1 m high with many, slender, upright stems. Leaves small, linear, often inrolled. Flowers white and purple.

**Flowering:** December. **Habitat:** Montane grassland and rocky slopes. **Altitude:** c. 2600 m. **Occurrence:** Common. **Distribution:** S. Tanzania, Malawi, Zimbabwe to South Africa (KwaZulu-Natal).

**Localities:** Higher parts of Mt. Mulanje, *Chapman JD 330* (FHO).

### *Polygala adamsonii* Exell

Prostrate herb with long, thin, shortly pubescent stems. Leaves small, linear, tapering to a pointed apex, inrolled. Flowers pinkish-blue.

**Flowering:** May, December. **Habitat:** Montane grassland, on pathsides in stony ground. **Altitude:** 1750-2300 m. **Distribution:** Mt. Mulanje (Malawi) and Gúruè, Mozambique.

**Localities:** Little Ruu Hut, *Brummitt RK 12307* (K). Likabula Valley, just before the Munye-Munye crossing, *Chapman JD & Chapman EG 9480* (FHO). Sombani, on the lower slopes of Namisili, *Chapman JD & Patel IH 5702* (FHO).

### *Polygala ohlendorffiana* Eckl. & Zeyh.

Perennial herb with prostrate stems. Leaves ovate to suborbicular. Flowers purple or pink.

**Flowering:** June. **Fruiting:** September. **Habitat:** Montane grassland, in rough, gritty paths. **Altitude:** 1700-2200 m. **Distribution:** S. Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Cape Province).

**Localities:** Chambe Plateau, *Newman EI & Whitmore TC 661* (BM). Chambe Basin Ridge, Likulezi side, *Richards HM 16695* (K).

### *Polygala persicariifolia* DC.

Annual herb, up to 45 cm high or more. Leaves narrowly elliptic. Flowers greenish-pink or mauve.

**Flowering:** March. **Habitat:** Pathsides, fire breaks and roads in woodland. **Altitude:** c. 1000 m. **Occurrence:** Locally common. **Distribution:** From Ethiopia and Sudan to Mozambique.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9018* (FHO).

### *Polygala petitiana* A.Rich. var. *parviflora* Exell

Annual herb, up to about 60 cm high. Leaves very narrowly linear. Flowers pale yellow, tipped with purple, on ascending, flowering branches.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Sporadic. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9013* (FHO).

### *Polygala virgata* Thunb.

var. *decora* (Sond.) Harv.

Shrub, up to about 3 m high. Leaves linear to narrowly elliptic. Flowers large, deep-purple to mauve, fading to white.

**Flowering:** November-May. **Habitat:** Edge of transition woodland and forest, montane grassland. **Altitude:** 900-2000 m. **Occurrence:** Occasional. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Thuchila Shelf, *Chapman JD 5670* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6800* (FHO). Valley to the C.C.A.P. cottage, on the Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 8035* (K). Likabula to Lichenya Path, *Chapman JD & Tawakali EJ 5540* (FHO).

### *Securidaca longipedunculata* Fresen.

Shrub or small tree, up to 8 m high. Leaves broadly oblong to narrowly elliptic. Flowers from maroon to pale pink, slightly scented. Fruits oblong with an obliquely, curved wing.

**Flowering:** November-February. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 800 m. **Occurrence:** Sporadic. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula, *Chapman JD 341* (FHO). Chitakali, estate boundary, *Chapman JD & Chapman EG 6802* (FHO).

## POLYGONACEAE

### *Polygonum salicifolium* Willd.

Erect, glabrescent annual herb, up to 1 m high. Leaves elliptic, sub-sessile. Flowers pink or white, in a group of slender racemes.

**Flowering:** April. **Habitat:** In damp ground near streams. **Altitude:** c. 800 m. **Occurrence:** Local. **Distribution:** Throughout tropical Africa. Naturalised in Madagascar.

**Localities:** Esperanza, *Chapman JD & Chapman EG 7482* (MO).

### *Rumex abyssinicus* Jacq.

Stout, perennial herb, up to about 1 m high. Leaves spear-shaped. Flowers green in an erect, branched inflorescence.

**Flowering:** February. **Habitat:** Disturbed ground such as paths and hoed fire traces in montane grassland. **Altitude:** c. 1900 m. **Occurrence:** Local. **Distribution:** Widespread in the highlands of tropical Africa. Also in Madagascar.

**Localities:** Linji (upper Lichenya) Plateau, *Chapman JD & Chapman EG 7255* (MO).

## PORTULACACEAE

### *Talinum portulacifolium* (Forssk.) Asch. ex Schweinf.

Perennial, glabrous herb, up to 40 cm or more



high. Leaves slightly fleshy, obovate. Flowers purplish-pink, in lax terminal inflorescences. Capsules small, globular, reddish-orange.

**Flowering:** Ending December. **Fruiting:** December.

**Habitat:** Streamside in woodland. **Altitude:** c. 700 m.

**Distribution:** Widespread from Ethiopia to South Africa.

**Localities:** Chitakali, at the picnic spot beside the stream, *Chapman JD & Chapman EG 6957* (FHO).

## PRIMULACEAE

Ref. Taylor, 1958.

### *Anagallis oligantha* P.Taylor

Creeping, perennial herb, with prostrate stems rooting at nodes. Leaves suborbicular, up to 5 mm long, subsessile. Flowers white or pale pink.

**Habitat:** On peaty soil on streambanks or flat rocks. **Altitude:** 1800-2000 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Little Ruo Plateau, *Newman EI & Whitmore TC 454* (BM). Base of West Peak, *Richards HM 16641* (BM).

### *Ardisiandra sibthorpioides* Hook.f.

Creeping, hairy, perennial herb. Leaves broadly ovate or orbicular, crenately 5-9 lobed, coarsely toothed. Flowers white.

**Flowering:** March. **Habitat:** Evergreen forest, in the shade of boulders. **Altitude:** c. 1100 m. **Distribution:** Cameroon, Ethiopia, Sudan, D.R. Congo, Uganda, Kenya, Tanzania and Malawi.

**Localities:** Foot of Great Ruo Gorge, between the hydro-electric station and the dam, *Brummitt RK & Banda EA 9212* (K).

## PROTEACEAE

Refs. Brummitt & Arner, 1993; Chisumpa & Brummitt, 1987; Arner, 1989.

### *Faurea delevoyi* De Wild.

Tree, up to 30 m high. Leaves glossy green above, paler below. Crushed leaves and fruits smell of turpentine. Flowers greenish-cream, with a milky fragrance.

**Flowering:** June-December. **Fruiting:** July-February.

**Habitat:** Riparian forest. **Altitude:** 900-1550 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likulezi Gorge, *Chapman JD & Chapman EG 7695* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 7883* (FHO). Likabula Valley, at the Satwi Stream, *Chapman JD & Chapman EG 8139* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9505* (FHO).

### *Faurea racemosa* Farmar

Tree, up to 30 m high, but usually smaller. Flowers pedicellate, in racemes, red in bud, white when open.

**Flowering:** January-March. **Fruiting:** April-September.

**Habitat:** Edge of and in montane forest **Altitude:** 1250-1900 m. **Occurrence:** Occasional to locally common. **Distribution:** S. Malawi (Mulosa Mt. and the Mulanje massif) and Mozambique (Mt. Namuli).

**Localities:** Lichenya Plateau, near forestry hut, *Chapman JD 5646* (FHO). Approach to the Chiphalombe shelf, *Chapman JD & Chapman EG 7856* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7947* (FHO). Ruo Gorge, just above the Savani Stream crossing, *Chapman JD & Chapman EG 8106* (FHO). Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 8130* (FHO). Madzeka Hut, *Chapman JD & Chapman EG 8366* (FHO). Mchese Mt., Napolo Stream, *Chapman JD & Chapman EG 8680* (FHO). Mchese Mt., Nampende valley, *Chapman JD & Chapman EG 9252* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9330* (FHO).

### *Faurea rochetiana* (A.Rich.) Pic. Serm.

Small tree, up to about 6 m high. Leaves ovate-lanceolate to elliptic, leathery, hairy on under-surface. Flowers dark maroon in bud, creamy-maroon when open, in spikes up to 18 cm long.

**Flowering:** March-September **Fruiting:** June-January

**Habitat:** *Brachystegia* woodland, rocky streambanks.

**Altitude:** 1400-1700 m. **Occurrence:** Sporadic.

**Distribution:** Widespread from Nigeria and Ethiopia south to Angola and southern Africa.

**Localities:** Phalombe Gorge, *Chapman JD 578* (FHO). Sombani path above Fort Lister, *Chapman JD & Chapman EG 7750 & 8046* (FHO).

### *Faurea saligna* Harv.

Tree, up to about 17 m high, with a straight, slender trunk. Leaves lanceolate-elliptic, glaucous green beneath, petioles red. Flowers creamy-green, reddish at the base and brownish at the tip, with a coconut fragrance.

**Flowering:** July-November. **Fruiting:** August-February.

**Habitat:** *Brachystegia* woodland, forest edge thicket.

**Altitude:** 1050-1250 m. **Occurrence:** Common to locally abundant. **Distribution:** D.R. Congo, Rwanda, Burundi, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, KwaZulu-Natal) and Angola.

**Localities:** Between Likabula & Thuchila Rivers, *Chapman JD 406* (FHO). Likabula Valley, *Chapman JD 5873* (FHO). In the Likabula Valley, at the Satwi Stream, *Chapman JD & Chapman EG 7188* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7865* (FHO).

### *Protea caffra* Meisn. ssp. *nyasae* (Rendle) Chisumpa & Brummitt

Syn. *Protea nyasae* Rendle

Shrub, up to about 3 m high. Leaves sessile, glabrous or almost so, oblanceolate, broadest at



about the middle, narrowly rounded at the base. Flowers white, surrounded by reddish bracts.

**Flowering:** May-December. **Habitat:** Montane grassland, among rocks and other shrubs. **Altitude:** 1800-2450 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Lichenya path, *Chapman JD 302* (FHO). Cilemba Peak, above the Linji Plateau, *Chapman JD 6062* (FHO). Linji (Lichenya) plateau, C.C.A.P. Cottage, *Chapman JD & Chapman EG 6991* (FHO). Summit ridge of Mchese Mt., *Chapman JD & Chapman EG 8684* (FHO). Thuchila to Chinzama, near the col, *Chapman JD & Patel IH 5760* (FHO). Manene Peak, *Chapman JD & Patel IH 5771* (FHO).

### *Protea gaguedi* Gmel.

Shrub, up to 3-4 m high. Leaves sessile, long and linear, slightly curved. Flowers white, the surrounding bracts with a dense, silvery pubescence.

**Flowering:** January. **Habitat:** *Brachystegia* woodland. **Altitude:** 900-1100 m. **Occurrence:** Abundant. **Distribution:** Ethiopia to South Africa (Transvaal, KwaZulu-Natal), Swaziland, Angola and Namibia.

**Localities:** Near Likabula, *Chapman JD 515* (FHO). Likabula Valley, *Chapman JD & Chapman EG 7122* (FHO).

### *Protea madiensis* Oliv. ssp. *madiensis*

Shrub, up to about 5 m high. Leaves sessile, very broadly elliptic, narrowing abruptly from the middle to the base. Flowers white, bracts tipped with deep pink.

**Flowering:** May-June. **Habitat:** *Brachystegia* woodland or wooded, tall grassland. **Altitude:** 1200-1350 m. **Distribution:** Widespread from Nigeria and Cameroon to Ethiopia, southwards to Malawi and Mozambique and Angola.

**Localities:** Likulezi Ng'ono valley, *Chapman JD & Chapman EG 7523* (FHO). Western slopes of Mchese Mt., above Fort Lister Gap, *Chapman JD & Chapman EG 8578* (FHO).

### *Protea petiolaris* (Hiern) Baker ssp. *elegans* Chisumpa & Brummitt

Small tree, up to 7 m high. Leaves petiolate, broadly elliptic, often curved. Flowers white, bracts pinkish-red.

**Flowering:** November-February. **Habitat:** *Brachystegia* woodland or shrubby hillsides. **Altitude:** 1400-1800 m. **Occurrence:** Very common. **Distribution:** S. D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Between the valleys of the Likulezi and Likulezi Ng'ono Rivers, *Chapman JD 510* (FHO). Likabula-Lichenya path, just above the Munye-Munye Stream, *Chapman JD 6110* (FHO). On the Boma Path, *Chapman JD & Chapman EG 6862* (FHO).

### *Protea welwitschii* Engl.

Shrub or small tree, up to 3-5 m high. Leaves sessile, base clasping the stem, hairy on both

surfaces. Flowers white and sweet-smelling, bracts pinkish-red.

**Flowering:** March. **Habitat:** Montane grassland, among rocks. **Altitude:** c. 1600 m. **Distribution:** D.R. Congo, Uganda, Rwanda, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, KwaZulu-Natal) and Angola.

**Localities:** Boma Path to Lichenya Plateau, *Chapman JD & Chapman EG 7287* (FHO).

## RANUNCULACEAE

*Refs.* Brummitt, 1976, 2000.

### *Clematis brachiata* Thunb.

Woody climber, reaching up to 15 m. Leaves pinnate, leaflets often with a central lobe and two smaller, lateral lobes, margin coarsely dentate. Sepals petaloid, white. Achenes (including persistent style), up to 4 cm long.

**Flowering:** March-May. **Fruiting:** May onwards. **Habitat:** Transition woodland, cedar forest, montane grassland. **Altitude:** 1100-2100 m. **Distribution:** Widespread in tropical and southern Africa.

**Localities:** Chambe, *Chapman JD 534* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7496* (FHO). Foot of Litakala Peak, overlooking the Fort Lister Gap, Nandiwo Stream, *Chapman JD & Chapman EG 8593* (FHO). Sombani Basin, *Chapman JD & Patel IH 5714* (FHO).

### *Clematis chrysocarpa* Welw. ex Oliv.

ssp. *bijuga* Brummitt

Syn. *Clematis chrysocarpoides* De Wild.; *Clematopsis lineariloba* Hutch. & Summerh.

Perennial herb, up to 1.5 m high. Leaves with two pairs of narrow leaflets. Flowers solitary. Sepals petaloid, cream. Persistent style dark brown, densely covered in golden hairs.

**Fruiting:** March. **Habitat:** Montane grasslands. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Chambe, *Chapman JD 556* (FHO).

### *Clematis iringaensis* Engl.

Woody scrambler. Leaves pinnate. Leaflets 2-3-lobed, strongly asymmetric. Sepals petaloid, white with a slight fragrance.

**Flowering:** March. **Habitat:** *Brachystegia* woodland, on newly exposed soil. **Altitude:** c. 1000 m. **Distribution:** D.R. Congo, Uganda, Tanzania, Zambia and Malawi.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9008* (FHO).

### *Clematis simensis* Fresen.

Woody climber, up to about 7 m or scrambler over rocks. Leaves pinnate. Leaflets ovate, rounded or cordate at the base, margins entire to



regularly dentate. Sepals petaloid, cream. Achenes mid-brown in colour, ovate with a long, thin, white, persistent style.

**Flowering:** From April. **Fruiting:** July. **Habitat:** Rocky terrain, near rivers. **Altitude:** c. 900-1000 m. **Occurrence:** Locally abundant. **Distribution:** Widespread on the mountains of East Africa and Cameroon, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Phalombe River, *Chapman JD & Chapman EG 7807* (FHO).

*Clematis villosa* DC. ssp. *kirkii* (Oliv.) Brummitt  
Syn. *Clematis kirkii* Oliv.;

*Clematopsis scabiosifolia* DC. ssp. *kirkii* (Oliv.) Brummitt  
Robust, perennial herb, up to about 70 cm high. Leaves pinnate, sparsely hairy on lower surface, leaflets pointed at apex. Flowers, 1-many per stem. Sepals petaloid, creamy-white. Achenes with white hairs.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Sporadic. **Distribution:** S. D.R. Congo, Tanzania, Zambia, Malawi and Mozambique. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 9019* (FHO).

*Knowltonia transvaalensis* Szyszyl.

Perennial herb, up to about 60 cm high. Leaves biternate, hairy, with long petioles. Flowers in simple or compound umbels. Sepals petaloid, white tinged with pink. Fruits fleshy, styles not persistent.

**Flowering:** May-October. **Habitat:** Montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Common. **Distribution:** Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal)

**Localities:** Madzeka Valley, *Chapman JD & Patel IH 5721* (FHO). Below Namisili Peak, Sombani Basin, *Strugnell AM 66* (FHO).

*Ranunculus multifidus* Forssk.

Much-branched, perennial herb, up to about 1 m high. Leaves bi- or tripinnate. Sepals not petaloid, reflexed. Petals present, yellow.

**Flowering:** November. **Fruiting:** November. **Habitat:** Streambanks. **Altitude:** c. 1800 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 8223* (MO).

*Thalictrum rhyhocarpum* Dill. & A.Rich.

Perennial herb, up to 4 m high. Leaves large, 3 or 4 pinnate. Inflorescence lax, many-flowered. Sepals petaloid, green to purplish.

**Flowering:** From December. **Fruiting:** March. **Habitat:** Edge of montane or riparian forest. **Altitude:** 1950-2100 m. **Occurrence:** Local. **Distribution:** Widespread on the mountains of tropical Africa and South Africa.

**Localities:** Between Thuchila and Ruo Valley, *Jackson G 1932* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8287* (MO). Sombani Basin, *Chapman JD & Chapman EG 8357* (MO).

## RESTIONACEAE

Refs. Linder, 1984, 1985, 1995.

*Restio mahonii* (N.E.Br.) Pillans

Herb, with dark green stems, forming large mats from spreading culms. Plants usually unisexual, spikelets racemose. Flowering stems, up to 100 cm high.

**Flowering:** April-May. **Habitat:** Seepages or wet hollows in montane grassland. **Altitude:** 2100-2400 m. **Occurrence:** Widespread and scattered. **Distribution:** Widely disjunct populations on mountains in tropical Africa, i.e. Zimbabwe (eastern highlands), Malawi (Mt. Mulanje and Zomba Mt.), Tanzania (Uluguru Mts.) and D.R. Congo (Mt. Muhi)

**Localities:** Chambe Peak, *Chapman JD 5614* (FHO). Chinzama, *Chapman JD 5741* (FHO). Cilemba Peak, above the Linji Plateau, *Chapman JD 6057* (FHO). Chisepu and all the way up Sapitwa, *Chapman JD & Chapman EG 7577* (FHO).

*Restio mlanjiensis* H.P.Linder

Tussock-forming herb, 40 to 100 cm high, with clusters of culms from a basal root. Aerial parts look similar to those of *R. mahonii* but have a larger number of spikelets and a copious production of female flowers.

**Flowering:** December-January. **Habitat:** In shallow soil over bedrock. **Altitude:** c. 2100 m. **Occurrence:** Local. **Distribution:** Endemic to Mt. Mulanje. Only known from the Sombani Basin.

**Localities:** Sombani Basin, by the path to the Sombani Hut, *Strugnell AM & Salubeni AJ 58* (FHO).

## RHAMNACEAE

Refs. Johnston, 1972 ; Dowsett-Lemaire & White, 1990 f.

*Gouania longispicata* Engl.

Scrambling shrub or liane climbing by means of tendrils. Leaves ovate, base rounded to cordate, margin closely serrate. Rusty hairs on the stems, inflorescences, petioles and veins on lower leaf surface. Flowers in dense inflorescences. Fruits 3-winged.

**Flowering:** July. **Fruiting:** August. **Habitat:** Edges of and in forest. **Altitude:** 800-1650 m. **Distribution:** S.E. Nigeria, Ethiopia and Sudan southwards to Zimbabwe and Mozambique.

**Localities:** Mulosa Crater Gorge, above Lauderdale, *Chapman JD 6533* (FHO). Esperanza, *Chapman JD & Chapman EG 7999* (FHO). Mchese Mt., western slopes, in the Napolo Valley, *Chapman JD & Chapman EG 8707* (FHO).



***Helinus integrifolius* (Lam.) Kuntze**

Deciduous, herbaceous climber with tendrils. Leaves broadly ovate. Flowers glabrous, in axillary inflorescences on slender pedicels. Capsules obovoid, smooth and glabrous.

**Fruiting:** July. **Habitat:** Tall, wooded grassland. **Altitude:** c. 800 m. **Distribution:** D.R. Congo and Kenya southwards to South Africa (Cape Province) and Angola.

**Localities:** Eastern foot of Mchese Mt., near Nkhulambe, *Chapman JD & Chapman EG 8733* (FHO).

***Lasiodiscus usambarensis* Engl.**

Small tree, up to 8 m high. Leaves elliptic to ovate with acuminate apex, margin crenate-serrulate. Flowers subsessile in axillary inflorescences. Capsules globose, minutely tomentose.

**Fruiting:** September. **Habitat:** Forest understorey. **Altitude:** c. 1500 m. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Chisongeli Forest (West), *Chapman JD & Chapman EG 9291* (FHO).

***Phylica emirnensis* (Tul.) Pillans**

Syn. *Phylica tropica* Baker

Erect shrub, up to 4 m high. Leaves narrowly lanceolate and pointed, shiny above, white tomentose below, margins inrolled. Flowers in capitula at the ends of the branches, surrounded by leaves and densely hairy. Capsules black, topped with a tuft of white hairs.

**Flowering:** April-May. **Fruiting:** May, November. **Habitat:** Montane grassland, on rocky hillsides and streambanks. **Altitude:** c. 2000-2150 m. **Occurrence:** Sporadic. **Distribution:** S.W. Tanzania, Malawi and Madagascar.

**Localities:** Cilemba Peak, *Chapman JD 363* (FHO). Big Ruo Basin, *Chapman JD & Chapman EG 9380* (FHO). Chinzama to Sombani, *Chapman JD & Patel IH 5749* (FHO).

***Rhamnus prinoides* L'Hér.**

Spreading shrub up to 5 m high. Leaves alternate, elliptic, glabrous, shiny above. Flowers in 2-10 flowered axillary inflorescences. Fruits fleshy, blue-black when ripe.

**Flowering:** May. **Fruiting:** May-August. **Habitat:** Forest edge. **Altitude:** c. 1800-1900 m. **Distribution:** Cameroon, Ethiopia and Sudan to South Africa (Cape Province).

**Localities:** Likulezi Valley, *Chapman JD 484* (FHO). Near Lichenya Hut, *Chapman JD 5597* (FHO). Fort Lister Forestry Office to Sombani Plateau, *Chapman JD & Chapman EG 8756* (FHO).

***Ventilago diffusa* (G.Don) Exell**

Liane, up to 30 m high, climbs by encircling. Stem with rough, furrowed bark. Leaves alternate, ovate, acute at apex. Fruits with a long, single wing.

**Fruiting:** July. **Habitat:** Edge of stream-fringing forest. **Altitude:** c. 1400 m. **Distribution:** From Guinea-Bissau to Uganda and the D.R. Congo, Gabon to Angola, outlying populations in Kenya (Kakamega Forest), Tanzania (Lake Manyara N.P.) and Malawi (Mt. Mulanje).

**Localities:** Entrance to the Phalombe Gorge, *Chapman JD & Chapman EG 7867* (FHO).

***Ziziphus abyssinica* Hochst. ex A.Rich.**

Small, densely-branched, very thorny tree, about 3 m high. Leaf bases markedly asymmetric. Leaves ovate-oblong, glabrous above, persistently tomentose below. Fruits fleshy and edible.

**Fruiting:** April. **Habitat:** Woodland. **Altitude:** c. 800 m. **Distribution:** Senegal to Ethiopia, extending south to Mozambique and Zimbabwe, Angola.

**Localities:** Bottom of Chikomwe Hill, Likulezi R.C. Catachist Training Centre, *Chapman JD & White F 8439* (FHO).

***Ziziphus mucronata* Willd.**

Tree, up to about 15 m high, not spiny. Leaf base asymmetric but not as much as *Z. abyssinica*. Leaves ovate, glabrous. Fruits globose.

**Fruiting:** May. **Habitat:** Cultivated ground where there used to be woodland. **Altitude:** c. 750 m. **Distribution:** Senegal to Ethiopia, southwards to South Africa (Cape Province).

**Localities:** 0.5 km from Likabula Forestry Office, *Chapman JD & Chapman EG 8521* (FHO).

**RHIZOPHORACEAE**

*Refs.* Lewis, 1955; White et al. 2001.

***Cassipourea malosana* (Baker) Alston**

Syn. *Cassipourea congoensis* DC.

Tree, up to 35 m high, with a straight, slender bole and high, narrow crown. Leaves small broadly elliptic to ovate, glabrous, serrate margin. Flowers white.

**Flowering:** November-December. **Fruiting:** May. **Habitat:** Montane forest. **Altitude:** 1200-1950 m. **Occurrence:** Common. **Distribution:** Ethiopia and Sudan to South Africa (E. Cape Province). **Comments:** Slash is orange-brown and smells of onions.

**Localities:** Chambe Shelf, above Mwana Mulanje, *Chapman JD & Chapman EG 7604* (FHO). Phalombe River Gorge, *Chapman JD & Chapman EG 7965* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8061* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 8210 & 9439* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8676* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9153* (FHO). Mchese Mt., Nanaiwo Valley, *Chapman JD & Chapman EG 9208* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9333* (FHO). Big Ruo Valley, *Chapman JD & Chapman EG 9384* (FHO). Namitambo Valley, overlooking Likabula, *Chapman JD & Chapman EG 9547* (FHO).



## ROSACEAE

Ref. Mendes, 1978.

### *Alchemilla kiwuensis* Engl.

Creeping herb, 5 cm high when not flowering, with a persistent basal rosette. Leaves orbicular or reniform, lobed, sparsely hairy on both surfaces; basal leaves petiolate. Inflorescence usually a branched panicle of 1-4-flowered clusters.

**Habitat:** Streamsides and marshy, upland grassland. **Altitude:** c. 2100 m. **Distribution:** Cameroon, D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Between the Sombani and Ruo Basins, *Strugnell AM et al.* 73 (FHO).

### *Cliffortia nitidula* (Engl.) R.E.Fr. & T.C.E.Fr.

Shrub, semi-prostrate, to about 75 cm or up to 5 m high. Stiff, linear leaves, up to 1 cm long, revolute margins, densely arranged on short shoots. Flowers small, inconspicuous.

**Flowering:** November-February. **Fruiting:** November.

**Habitat:** Streambanks, forest edges and high-altitude rocky terrain. **Altitude:** 1300-2900 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Zimbabwe and Angola.

**Localities:** Lichenya Plateau, *Chapman JD* 322 (FHO). Above the waterfall on the Boma Path, *Chapman JD* 6112 (FHO). Sapitwa, *Chapman JD & Chapman EG* 7562 (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG* 7916 (FHO). On the West Peak approach to Sapitwa, *Chapman JD & Chapman EG* 8167 (FHO). Lichenya Plateau, *Chapman JD & Chapman EG* 8178 (FHO). Near the site of the Boma Hut, *Chapman JD & Chapman EG* 8181 (FHO).

### *Prunus africana* (Hook.f.) Kalkman

Tree, up to more than 25 m high, spreading crown, bole straight. Dark brown bark, raggedly scaling. Flowers greenish-white. Ripe fruit blue-black.

**Flowering:** April. **Fruiting:** May-October. **Habitat:** On riverbanks in forest. **Altitude:** 550-1400 m. **Distribution:** Widespread in tropical Africa and South Africa. **Comments:** This is a protected species, listed in CITES Appendix II.

**Localities:** Lauderdale, beside the Mulosa Stream, *Chapman JD & Chapman EG* 6507 (FHO). Likabula Valley, Nasato Stream source, *Chapman JD & Chapman EG* 7460 (FHO). Phalombe River, below the Gorge, *Chapman JD & Chapman EG* 7842 (FHO). Mchese Mt., western slopes, Napolo Valley, *Chapman JD & Chapman EG* 8721 (FHO). Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG* 8887 (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG* 9074 (FHO). Limbuli, *Chapman JD & Chapman EG* 9357 (FHO).

### *Rubus chapmanianus* Kupicha

Scrambling shrub. Flowering branches densely yellowish-grey villous, with small, decurved, yellow-brown prickles. Leaves villous on both

surfaces, densely so below. Large, obovate stipules, densely appressed-villous. Petals very small or absent. Fruit ripening black.

**Habitat:** Path sides and open patches in cedar forest.

**Altitude:** c. 1800 m. **Occurrence:** Fairly common.

**Distribution:** Uganda, Tanzania, Zambia and Malawi.

**Localities:** Path from the Fort Lister forestry depot to Sombani, *Blackmore S & Kupicha FK* 988 (BM). Likulezi Valley, *Chapman JD* 489 (FHO).

### *Rubus ellipticus* Sm.

Robust, scrambling shrub with canes, up to 3 m high. Stems reddish-brown, covered with straight, red bristles; prickles straight or weakly decurved. Leaflets elliptic to obovate, dark green above, pale greyish-green below. Flowers white.

**Flowering:** August. **Fruiting:** August onwards. **Habitat:**

Along paths and forest edges. **Altitude:** 1000-2000 m.

**Occurrence:** Common. **Distribution:** A native of India and Sri Lanka, found naturalized throughout Africa. **Comments:**

This is the 'Himalayan raspberry' which has become a serious weed on Mt. Mulanje.

**Localities:** Lichenya Plateau, *Chapman JD* 5862 (FHO).

### *Rubus exsuccus* Steud. ex A.Rich.

Scrambling shrub. Flowering branches covered in dense yellow hairs, with glabrous, brownish-yellow, decurved prickles. Leaflets ovate, yellowish-green above, pale green below. Flowers with small white petals which fall early. Fruit ripening through orange to black.

**Flowering:** September. **Fruiting:** October. **Habitat:** Often amongst bracken and grass, on rocky streambanks or at edge of forest. **Altitude:** 840-1050 m. **Distribution:** Widespread down the eastern side of Africa, including D.R. Congo, as far as South Africa (Transvaal).

**Localities:** Crater Gorge, *Chapman JD* 6656 (FHO). Limbuli, *Chapman JD & Chapman EG* 9280 (FHO).

### *Rubus pinnatus* Willd.

Scrambling shrub. Flowering stems purplish with a white bloom, glabrous yellow-brown decurved prickles. Leaflets glabrous; dark green above, paler below. Fruit orange.

**Fruiting:** April. **Habitat:** Amongst tall grass at streamside. **Altitude:** c. 1100 m. **Distribution:** Widespread in tropical Africa and southern Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG* 7503 (FHO).

### *Rubus rigidus* Sm.

Scrambling shrub. Flowering branches pale-grey tomentose, prickles decurved, yellow-orange. Leaflets ovate with very jagged margins, dark green above, greyish-tomentose below. Flowers pale pink. Fruit orange.



**Fruiting:** May. **Habitat:** In disturbed soil along firebreak in montane grassland. **Altitude:** c. 2100 m. **Distribution:** From Cameroon, D.R. Congo, Ethiopia, Uganda and through the rest of Africa.

**Localities:** Sombani to Chinzama path, Sombani Basin, Blackmore S & Kupicha FK 997 (BM). Sombani, Chapman JD & Patel IH 5699 (FHO).

### *Rubus scheffleri* Engl.

Scrambling shrub. Stems glaucous-pubescent. Leaves virtually glabrous, dark green above, paler below. Flowers white, pale pink or purple with the petals twice as long as the sepals. Fruits globose, black.

**Flowering:** August. **Habitat:** Forest undergrowth by streams. **Altitude:** c. 1900 m. **Distribution:** Kenya, Uganda, Tanzania and S. Malawi.

**Localities:** Nayawani forest, Newman EI & Whitmore TC 545 (BM).

### *Rubus* sp.

Low, scrambling shrub. Stems dark reddish-brown; the flowering side-shoots are also covered in yellowish-cream hairs. Leaves with 3 leaflets, dark green above, paler below, both sparsely hairy. Flowers large (3-4 cm across), white.

**Flowering:** November. **Fruiting:** Immature in November. **Habitat:** Scrub at forest margin. **Altitude:** c. 1850 m. **Comments:** This is probably an exotic species which might have escaped from the one-time Boma hut garden.

**Localities:** Lichenya Plateau, site of old Boma Hut, Chapman JD & Chapman EG 8238 (FHO).

## RUBIACEAE

Refs. Bridson, 1979, 1980, 1985, 1986 a & b, 1987, 1992, 2001; De Block 1998; Degreef et al. 2001; Hepper & Wood, 1982; Robbrecht, 1979, 1982, 1987; Robbrecht & Puff, 1986; Verdcourt, 1973 a & b, 1980.

### *Aidia micrantha* (K.Schum.) F.White

Small, slender, forest understorey tree, up to 15 m high but occasionally 20 m. Often forking low down. Fragrant, creamy-white flowers. Fruits red when ripe.

**Flowering:** October-November. **Fruiting:** Seemingly much of the time and often with the flowers: July-November; March-April. **Habitat:** Stream-fringing forest. **Altitude:** 650-1600 m. **Distribution:** From Cameroon and the Central African Republic to Tanzania, Zambia, Malawi and Mozambique. **Comments:** In Malawi, only known from Mt. Mulanje (White et al. 2001).

**Localities:** Entrance to the Crater, Chapman JD 6484 (FHO). Nkolu Stream, above Lauderdale, Chapman JD & Chapman EG 6737 (FHO). Likabula Valley, source of Nasato Stream, Chapman JD & Chapman EG 7342 (FHO). Likulezi Valley, Chapman JD & Chapman EG 7488 (FHO). Phalombe River, near the gorge, Chapman JD & Chapman EG 7873 (FHO).

Chiphalombe River, below the shelf, Chapman JD & Chapman EG 7894 (FHO). Big Ruo Valley, Chapman JD & Chapman EG 9403 (FHO). Chisongeli Forest, Chapman JD & Chapman EG 9536 (FHO).

### *Anthospermum welwitschii* Hiern

Shrub, up to 2.5 m high, erect, usually a branched single-stem. Leaves in pseudowhorls. Small inconspicuous flowers.

**Flowering:** March-May. **Habitat:** Tall, unburnt grassland or rocky hillsides in the ericaceous zone. **Altitude:** 1750-2300 m. **Occurrence:** Sporadic. **Distribution:** Widely but disjunctly distributed in the mountainous areas of the D.R. Congo, Kenya, Tanzania, Zambia, Malawi, Angola and South Africa (Transvaal).

**Localities:** Chiphalombe Shelf, Chapman JD 570 (FHO). Approach to Cilemba, from Likabula, Chapman JD & Chapman EG 7281 (FHO). Western slopes of Mchese Mt., Chapman JD & Chapman EG 8687 (FHO). Chinzama, Chapman JD & Patel IH 5786 (FHO).

### *Anthospermum whyteanum* Britten

Sub-shrub, up to 70-100 cm high. Many-stemmed. Small leaves in whorls of 3, densely covered in whitish spreading hairs. Flowers small, purple in bud becoming yellow.

**Flowering:** February-March. **Habitat:** In rocky crevices and among rocks in montane grassland. **Altitude:** 2000-2400 m. **Occurrence:** Locally common. **Distribution:** S. Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya Plateau, Chapman JD 518 (FHO). Cilemba Peak, Chapman JD 6058 (FHO). Approach to Cilemba from the Likabula Valley, Chapman JD & Chapman EG 7278 (FHO). Sombani Plateau, near Litakala Peak, Chapman JD & Chapman EG 8762 (FHO).

### *Anthospermum* ?*whyteanum* × *welwitschii*

Sub-shrub, up to 90 cm high. Leaves slightly larger and not so densely hairy as *Anthospermum whyteanum*. Inconspicuous flowers.

**Flowering:** May. **Habitat:** On a rocky, open hillside. **Altitude:** c. 1900 m. **Occurrence:** Fairly common. **Localities:** Mchese Mt., Nandiwo Valley, Chapman JD & Chapman EG 9086 (FHO).

### *Breonadia salicina* (Vahl) Hepper & J.R.I.Wood Syn. *Adina microcephala* (Delile) Hiern

Tree, up to 20 m tall. Large, lanceolate leaves in whorls of 3 or 4, somewhat clustered at the stem apex. Inflorescence a solitary, spherical head, up to 2.5 cm in diameter. Flowers pinkish green or white.

**Flowering:** October-December. **Habitat:** On river banks or in rocky river beds. **Altitude:** 550-900 m. **Distribution:** Widespread in tropical Africa and in eastern South Africa.

**Localities:** Lichenya F.R., T.A. Mabuka's Milonde Court, Chapman JD 6619 (FHO). Likabula River, Chapman JD & Chapman EG 7001 (FHO). Likabula Valley, Chapman JD & Chapman EG 8957 (FHO).



***Canthium oligocarpum* Hiern**

ssp. *capum* (Bullock) Bridson

Syn. *Canthium capum* Bullock

Understorey shrub or tree, up to 20 m tall. Leaves broadly elliptic, uniformly spaced along the stem. Flowers white or yellow-green.

**Habitat:** Sub-montane forest. **Altitude:** 1700 m.

**Distribution:** Tanzania, Malawi and Mozambique.

**Localities:** Big Ruvo Valley, *Chapman JD & Chapman EG 9393* (FHO).

***Canthium parasiebenlistii* Bridson**

Syn. *Canthium* sp. 3 of F.White, *Forest Flora of Northern Rhodesia*.

Small, erect tree, up to 8 m tall. Leaves broadly elliptic to round, in pairs at apex of main stem and short, lateral branches. Flowers greenish-yellow.

**Flowering:** October. **Habitat:** In low forest on steep rocky slopes. **Altitude:** 1250-1500 m. **Occurrence:** Locally common. **Distribution:** D.R. Congo, Tanzania, Zambia and Malawi.

**Localities:** Likabula Valley, source of Nasato Stream, *Chapman JD & Chapman EG 7377* (FHO). Likabula-Lichenya path, *Chapman JD & Chapman EG 8173* (FHO).

***Catunaregam spinosa* (Thunb.) Tirveng.**

ssp. *taylorii* (S.Moore) Verdc.

Syn. *Xeromphis obovata sensu* F.White, *Forest Flora of Northern Rhodesia*.

Shrub or small tree, up to 6 m high, spreading with arching branches, axillary spines. Leaves softly hairy on both surfaces, borne on short lateral shoots. Flowers white turning yellow, sweet smelling, borne on the short, lateral shoots. Fruits yellow, shortly hairy and longitudinally shallowly ridged.

**Flowering:** November. **Fruiting:** May-June. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Locally common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Chikomwe Hill, Likulezi at the R.C. Catechist Training Centre, *Chapman JD & Chapman EG 7678* (FHO). Mchese Mt., Fort Lister Gap, *Chapman JD & Chapman EG 8571* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8934* (FHO).

***Cephalanthus natalensis* Oliv.**

Shrub or climber. Leaves opposite, acuminate. Flowers small, greenish, borne in globular inflorescences.

**Flowering:** August-November. **Habitat:** In evergreen forest, forest edge and in the open among rocks. **Altitude:** 1500-1800 m. **Distribution:** S. Malawi, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal). **Comments:** The specimens collected from the forest habitat were climbers, the one from the more open habitat was a shrub.

**Localities:** Madzeka path, *Chapman JD & Chapman EG 8004* (FHO). Above the Mulosa Drift Pine Plantation,

*Chapman JD & Chapman EG 8860* (FHO). Big Ruvo Valley, *Chapman JD & Chapman EG 9390* (FHO).

***Chassalia parvifolia* K.Schum.**

Spindly shrub, up to 3 m high. Flowers white scented. Inflorescence branches white. Fruits ripening black.

**Flowering:** September-October. **Fruiting:** February.

**Habitat:** Understorey of fringing forest. **Altitude:** 850-1500 m. **Occurrence:** Common. **Distribution:** Kenya, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Inside the entrance to the Lauderdale Crater, *Chapman JD 6483* (FHO). Chitakali Stream, on the Boma Path, *Chapman JD & Chapman EG 6863* (FHO). Little Lichenya River, above Mini-Mini, *Chapman JD & Chapman EG 8349* (FHO).

***Coffea arabica* L.**

Small tree, up to 6 m high. Leaves broadly elliptic. Fruit red, oblong-ellipsoid, in shortly stalked clusters.

**Fruiting:** December. **Habitat:** In light shade of *Newtonia* trees. **Altitude:** c. 800 m. **Distribution:** Widely cultivated throughout the tropics. Some wild populations.

**Localities:** Chitakali Stream, *Chapman JD & Chapman EG 6942* (FHO).

***Coffea mufindiensis* Hutch. ex Bridson**

ssp. *australis* Bridson

Shrub or small tree, up to 7 m high. Leaves soft-textured, shortly-stalked, shiny on the upper surface. Flowers white, borne single in leaf axils. Fruits orange, seeds surrounded by a sweet-tasting pulp.

**Flowering:** October-November. **Fruiting:** July-September. **Habitat:** Mid-altitude and riparian forest. **Altitude:** 900-1400 m. **Occurrence:** Very common in its habitat. **Distribution:** S. Malawi, Zimbabwe (Manicaland) and Mozambique (Manica e Sofala District).

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD 6646* (FHO). Mchese Mt., Nthambi Gorge above Misomali Village, Nkhulambe area, *Chapman JD & Chapman EG 8845* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9183 & 9222* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9360* (FHO).

***Coptosperma neurophyllum* (S.Moore) Degreef**

Syn. *Tarenna neurophylla* (S. Moore) Bremek.

Shrub or tree, up to about 10 m high. Leaves narrowly elliptic. Flowers white or yellowish-green with a narrow corolla tube (4-5 mm long). Fruits black when ripe.

**Flowering:** September-November. **Fruiting:** November-February. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1000 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula River, near the forestry depot, *Chapman JD & Chapman EG 7161* (FHO). Phalombe River (west bank), *Chapman JD & Chapman EG 8056* (FHO). Lower



slopes of Mchese Mt., in the Fort Lister Gap, *Chapman JD & Chapman EG 8727* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8945* (FHO).

***Craterispermum schweinfurthii* Hiern**

Small tree, up to 7 m tall with fluted, short, rough-barked bole. Flowers white to greenish, supra-axillary, no obvious perfume during the day.

**Flowering:** May-October. **Fruiting:** May. **Habitat:** On rocky, river banks. **Altitude:** 600-900 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Mulosa (Crater) Gorge, at the Boma Water Intake, *Chapman JD 6529* (FHO). Likulezi River, *Chapman JD & Chapman EG 7636* (FHO). Ruo River, down stream from the Ruo- Mulosa confluence, *Chapman JD & Chapman EG 9364* (FHO).

***Cremaspora triflora* (Thonn.) K.Schum.**

ssp. *triflora*

Lax shrub or small tree, erect, regularly branching, up to 9 m high. Brown, shallowly-striated bark. Opposite, foliose stipules. Flowers white.

**Flowering:** April-October. **Fruiting:** June-January. **Habitat:** Understorey of riverine forest, occasionally extending into nearby, unburnt miombo woodland. **Altitude:** 600-1300 m. **Occurrence:** Common. **Distribution:** From Senegal to East Africa, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Above Esperanza, Pamba Stream, *Chapman JD 6671* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6731* (FHO). Likabula Valley, Chapaluka Stream crossing, *Chapman JD & Chapman EG 7117* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7499* (FHO). Approach to the Phalombe Gorge, *Chapman JD & Chapman EG 7839* (FHO). Western slopes of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8654* (FHO). Above the Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8866* (FHO).

***Crossopteryx febrifuga* (Afzel. ex G.Don) Benth.**

Small, deciduous tree, up to about 6 m high. Leaves elliptic to ovate, velvety pubescence. Dense inflorescences of creamy-white flowers on peduncles up to 6 cm long. Fruits ripening to brown.

**Fruiting:** May-June. **Habitat:** Dry woodland. **Altitude:** c. 900 m. **Distribution:** Widespread in tropical Africa, South Africa (Transvaal) and N. Namibia.

**Localities:** Base of Mchese Mt., Phalombe area, *Chapman JD 588* (FHO). Chikomwe Hill, Likulezi R.C. Catachist Centre, *Chapman JD & Chapman EG 7675* (FHO).

***Fadogia ancylantha* Hiern**

Shrub, up to 3 m high. Leaves elliptic to rounded-obovate, in pairs or whorls of 3. Flowers greenish-yellow. Fruits dark slate grey-green.

**Fruiting:** May. **Habitat:** Miombo woodland. **Altitude:** c. 850 m. **Distribution:** Nigeria, D.R. Congo, Burundi, Sudan, Uganda, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9109* (FHO).

***Fadogia elskensii* De Wild. var. *elskensii***

Suffrutex, up to about 1 m high. Leaves opposite or in 3s, broadly elliptic; slightly bullate on the upper surface; the lower surface densely whitish or yellowish-pubescent overlying a distinct stomatal pattern. Flowers creamy-white. Fruits black, clustered in the leaf axils.

**Fruiting:** March-May. **Habitat:** Open *Brachystegia* woodland, wooded grassland. **Altitude:** 900-1700 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Burundi, Tanzania, Malawi and Mozambique.

**Localities:** Chambe Plateau, *Chapman JD 533* (FHO). Likulezi River Valley, near the gorge, *Chapman JD & Chapman EG 7643* (FHO). Above Fort Lister Forestry Office, on the Sombani Hut path, *Chapman JD & Chapman EG 8784* (FHO).

***Galium bussei* K.Schum. & K.Krause**

var. *glabrum* Brenan

Lax, procumbent or scrambling herb, about 30 cm long. Stems (except nodes) and leaves glabrous. Fine, linear leaves in whorls of about 6. Flowers greenish-yellow.

**Flowering:** December-March. **Habitat:** In unburnt montane, tussock grassland or on fire traces. **Altitude:** 1000-1800 m. **Occurrence:** Sporadic. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9006* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 9444* (FHO).

***Galium chloroioanathum* K. Schum.**

Scrambling herb with soft, recurved prickles on the 4 distinct angles of the stem. Leaves broadly elliptic, in whorls of 6. Inflorescences very reduced, 1-3-flowered. Flowers greenish-yellow.

**Flowering:** May. **Fruiting:** September. **Habitat:** In forest undergrowth or forest edges. **Altitude:** c. 1750 m. **Occurrence:** Locally common. **Distribution:** The mountains of East Africa, Malawi, E. Zimbabwe and Madagascar. **Localities:** Lichenya Plateau, *Chapman JD 5659* (FHO).

***Gardenia imperialis* K. Schum.**

Small tree, up to 10 m high. Large obovate-elliptic leaves. Flowers white, pinkish on outside of the corolla tube. Fruits rusty brown, spherical or ellipsoid.

**Flowering:** September-February. **Fruiting:** February-May. **Habitat:** On river banks, in woodland. **Altitude:** 800-1100 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Beside Thuchila River, *Chapman JD 443* (FHO). Likabula River, near Likabula House, *Chapman JD & Chapman EG 7191* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7638* (FHO).



*Gardenia ternifolia* Schumach. & Thonn.

ssp. *jovis-tonantis* (Welw.) Verdc.

Syn. *Gardenia jovis-tonantis* (Welw.) Hiern

Rigid, small, horizontally-branched tree. Bark smooth, grey, with pale brown patches. Coriaceous, obovate leaves, up to 10 cm long, crowded at ends of short shoots. Flowers large, fragrant, green in bud, opening pale cream.

**Fruiting:** July. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 950 m. **Distribution:** Nigeria, Cameroon, Ethiopia, Sudan, D.R. Congo, Rwanda, Burundi, Zambia, Malawi, Mozambique and Angola.

**Localities:** Western foot of Mchese Mt., *Chapman JD & Chapman EG 8745* (FHO).

*Gardenia volkensii* K.Schum.

ssp. *spatulifolia* (Stapf & Hutch.) Verdc.

Small spreading tree, up to about 7 m high. Leaves tufted at the ends of short shoots, ovate and abruptly cuneate at the base. Fruits grey-green, with brown encrustations, pronouncedly ribbed when mature.

**Fruiting:** April. **Habitat:** Forest understorey. **Altitude:** c. 560 m. **Distribution:** Zambia, Malawi, Zimbabwe, Botswana, South Africa (Transvaal) and Swaziland.

**Localities:** Lichenya F.R., T.A. Mabuka's, Milonde Court, *Chapman JD & White F 8431* (FHO).

*Geophila repens* (L.) I.M.Johnst.

Prostrate, creeping herb, rooting at the nodes, up to about 7 cm high when flowering. Leaves rounded-reniform, cordate at the base. Flowers solitary, white. Fruits ripening black.

**Flowering:** January-April. **Fruiting:** April-June. **Habitat:** Floor of forest and miombo woodland. **Altitude:** 900-1200 m. **Occurrence:** Locally very abundant. **Distribution:** Widespread in tropical Africa.

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD 6647* (FHO). Nakatete Stream, below the Linji cliffs at Glenorchy, *Chapman JD & Chapman EG 7028* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9051* (FHO). Mchese Mt., Nampende Stream, *Chapman JD & Chapman EG 9122* (FHO).

*Heinsenia diervilleoides* K.Schum.

ssp. *diervilleoides*

Syn. *Aulococalyx diervilleoides* (K.Schum.) E.M.A.Petit

Slender, understorey tree, up to about 15 m high. The veins of the leaves red on the lower surface. Red and white bell-shaped, almost sessile flowers, crowded in the leaf axils. Fruits subglobose, black.

**Flowering:** September. **Fruiting:** October-November. **Habitat:** Mid-altitude forest. **Altitude:** 1100-1350 m. **Distribution:** D.R. Congo, Rwanda, Sudan, East Africa. **Localities:** Source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6796* (FHO). Luluzi River Gorge, above Chisambo, *Chapman JD & Chapman EG 8118*

(FHO). Muluzy Valley, Chisongeli forest, *Chapman JD & Chapman EG 9305* (FHO).

*Hymenodictyon floribundum* (Hochst. & Steud.) B.L.Rob.

Small tree, up to about 13 m high. Deciduous, leaves turning red before falling at the time of fruiting. Inflorescences terminal, erect, cylindrical and dense. Flowers yellow-brown to dark brown. Capsules brown.

**Flowering:** December. **Fruiting:** Specimens in fruit recorded from October-June. **Habitat:** Rocky streambanks in forest or *Brachystegia* woodland, sometimes growing on large rocks. **Altitude:** 900-1700 m. **Occurrence:** Very common in its habitat. **Distribution:** Widespread through tropical Africa.

**Localities:** Between Likabula and Lichenya, *Chapman JD 334* (FHO). Crater Gorge, Little Mulosa River, *Chapman JD 6631* (FHO). West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6889* (FHO). Likabula Valley, *Chapman JD & Chapman EG 7184* (FHO). Below Cilemba, at the source of the Nasato Stream, *Chapman JD & Chapman EG 7370* (FHO). Between Chiphalombe & Phalombe Streams, *Chapman JD & Chapman EG 7740* (FHO).

*Hymenodictyon parvifolium* Oliv.

Small tree, up to 4 m high. Leaves elliptic to oblanceolate. Flowers white to yellowish, in inflorescences, up to 8 cm long without a pair of bracts at the base. Capsule ellipsoid, reddish-brown.

**Fruiting:** August. **Habitat:** On rocky outcrops. **Altitude:** 800 m. **Distribution:** Kenya, Tanzania, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9262* (FHO).

*Ixora narcissodora* K.Schum.

Shrub or small tree, up to about 6 m high. Leaves narrowly lanceolate. Flowers white to pinkish with a narrow corolla tube (up to 7.5 cm long), only slightly scented. Fruit bright red.

**Flowering:** September-February. **Fruiting:** January-May. **Habitat:** Understorey of riparian forest or woodland. **Altitude:** 650-1000 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula River, *Chapman JD 509* (FHO). Chitakali Stream, in the tea estate, *Chapman JD & Chapman EG 6946* (FHO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 7148* (FHO). Likabula Valley, C.C.A.P. Estate, *Chapman JD & Chapman EG 8892* (FHO).

*Ixora scheffleri* K.Schum. & K.Krause

ssp. *scheffleri*

Tree, usually up to about 15 m high but one record of 27 m. Leaves elliptic to oblong-elliptic, papery. Flowers white tinged with pink. Fruits ripening black.



**Flowering:** Beginning December. **Fruiting:** May-November. **Habitat:** Forest understorey. **Altitude:** 1650-1800 m. **Distribution:** Tanzania and Malawi.

**Localities:** Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 8214* (FHO). Mchese Mt., Napolo Stream, *Chapman JD & Chapman EG 8671* (FHO). Mchese Mt., Nampande Valley, *Chapman JD & Chapman EG 9114* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9323* (FHO).

***Keetia foetida* (Hiern) Bridson**

Syn.: *Canthium foetidum* Hiern

Woody scrambler or climber. Leaves oblong-elliptic, glossy on upper surface. Flowers creamy-white, pollen-scented. Fruits slightly laterally compressed, indented to one side of the apex giving the fruits an asymmetrical appearance.

**Flowering:** September. **Fruiting:** April-June. **Habitat:** Fringing forest-edge, transition woodland or boulder fields. **Altitude:** 950-1100 m. **Distribution:** S. Malawi.

**Localities:** Likulezi Valley, *Chapman JD & Chapman EG 7498* (FHO). Between Phalombe & Chiphalombe Streams, *Chapman JD & Chapman EG 7741* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 8049* (FHO).

***Keetia gueinzii* (Sond.) Bridson**

Syn. *Canthium gueinzii* Sond.

Woody climber, scrambler or shrub, often 5-6 m high but sometimes reaching 15 m into the canopy. Leaves oblong-lanceolate with brown hairs appressed to the veins on the lowers surface. Flowers cream, sweetly scented. Fruits 2-seeded, turning black when mature.

**Flowering:** November-January. **Fruiting:** April-August. **Habitat:** In forest, thickets and *Brachystegia* woodland. **Altitude:** 650-1800 m. **Distribution:** Widespread in tropical Africa, also in South Africa.

**Localities:** Chitakali Stream, *Chapman JD & Chapman EG 6947* (FHO). Likabula Valley, Chapaluka track, *Chapman JD & Chapman EG 7085* (FHO). Likulezi Valley, *Chapman JD & Chapman EG 7495* (FHO). Below Chambe West Face, *Chapman JD & Chapman EG 7755* (FHO). Phalombe River, *Chapman JD & Chapman EG 7900* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8192* (FHO). Likabula Valley, Likabula House, *Chapman JD & Chapman EG 8634* (FHO). Western slopes of Mchese Mt., along the Nanthali Stream near Bwaibwai forest village, *Chapman JD & Chapman EG 8748* (FHO).

***Keetia venosa* (Oliv.) Bridson**

Syn. *Canthium venosum* (Oliv.) Hiern

Scrambling shrub or liane. Leaves narrowly to broadly elliptic, rounded at the base. Stipules heart-shaped. Flowers creamy-white. Fruits black.

**Flowering:** May. **Fruiting:** Specimens recorded as fruiting in May and November. **Habitat:** Forest and *Brachystegia* woodland as well as rocky river banks. **Altitude:** c. 800-900 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Likulezi River, *Chapman JD & Chapman EG 7633* (FHO). Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8648* (FHO). Limbuli, *Chapman JD & Chapman EG 9421* (FHO).

***Kohautia longifolia* Klotzsch**

Annual herb, up to about 40 cm high. Leaves linear-lanceolate, narrowed at the base. Inflorescences lax. Flowers small, purple.

**Flowering:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Sporadic. **Distribution:** N. Somalia, S.E. Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9021* (FHO).

***Lasianthus kilimandscharicus* K.Schum.**

Shrub or small tree, up to 10 m, in the forest understorey. Branches drooping. The broken ends of twigs have an unpleasant smell. Sessile, slightly scented white flowers grouped together in the leaf axils. Fruits ripening to blue with a blue-grey sheen.

**Flowering:** October. **Fruiting:** September-December. **Habitat:** Evergreen forest. **Altitude:** 1250-1900 m. **Occurrence:** Locally very common. **Distribution:** (ssp. *glabrescens*) Rwanda, Uganda, Kenya, Tanzania, Malawi, and Zimbabwe. **Comments:** P.L. Jannerup has placed the Mt. Mulanje specimens in ssp. *glabrescens* (Jannerup in press, Nord. J. Bot.)

**Localities:** Likulezi Valley, *Chapman JD 482* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 6977* (FHO). Ruu Gorge, *Chapman JD & Chapman EG 8108* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 8188* (FHO). Chisongeli forest, Muluzi Valley, *Chapman JD & Chapman EG 9342* (FHO).

***Mussaenda arcuata* Lam. ex Poir**

Arching, semi-scandent shrub or canopy liane. Flowers in terminal panicles on lateral branches, bright yellow with maroon or brown centres.

**Flowering:** November. **Fruiting:** March-November. **Habitat:** Rocky river banks, forest edge, woodland and *Eucalyptus* plantation. **Altitude:** 600-1250 m. **Occurrence:** Common. **Distribution:** Widespread in tropical Africa.

**Localities:** Mulosa Stream, leading to the Lauderdale Crater, *Chapman JD 6500* (FHO). Above Lauderdale, along the Nakolu Stream, *Chapman JD & Chapman EG 6757* (FHO). Chitakali Stream, near the Boma Path, *Chapman JD & Chapman EG 6882* (FHO). Chiphalombe Stream, *Chapman JD & Chapman EG 7884* (FHO). Mimosa Tea Research Station at the Segregation Block, *Chapman JD & Chapman EG 8393* (FHO). Limbuli, *Chapman JD & Chapman EG 9276* (FHO).

***Oldenlandia goreensis* (DC.) Summerh.**

var. *goreensis*

Annual herb with prostrate, decumbent or ascending stems. Stems virtually glabrous.



Leaves elliptic to ovate, margins ciliate. Flowers white. Capsule subglobose.

**Flowering:** March. **Fruiting:** March. **Habitat:** In permanently damp areas. **Distribution:** Widespread in tropical Africa; South Africa (Transvaal).

**Localities:** Foot of Great Ruo Gorge, *Brummitt RK & Banda 9202* (K).

*Oldenlandia herbacea* (L.) Roxb.

Delicate, much-branched, annual herb, up to 50 cm high. Small, pink flowers.

**Flowering:** April. **Habitat:** Along roadside in *Brachystegia* woodland. **Altitude:** c. 1300 m. **Occurrence:** Locally common. **Distribution:** Widespread in tropical and southern Africa.

**Localities:** Likabula Valley, Chapaluka path, *Chapman JD & Chapman EG 9054* (FHO).

*Oldenlandia lancifolia* (Schumach.) DC.

var. *scabridula* Bremek.

Perennial, straggling herb. Leaves linear to linear-lanceolate, roughly hairy. Flowers white tinged with pink. Capsule depressed subglobose.

**Flowering:** March. **Fruiting:** March. **Habitat:** On mud in wet places, or semi-aquatic. **Distribution:** Widespread in tropical Africa; South Africa (Transvaal).

**Localities:** Foot of Great Ruo Gorge, *Brummitt RK & Banda 9205* (K).

*Oldenlandia rupicola* (Sond.) Kuntze

var. *rupicola*

Scrambling, often mat-forming, herb. Small white or pink flowers.

**Flowering:** May-August. **Habitat:** Evergreen forest, forest edges or among grass on streambanks. **Altitude:** c. 1800-1950 m. **Distribution:** Kenya, Tanzania, Malawi, Mozambique, Zimbabwe and South Africa.

**Localities:** Chambe Basin, *Chapman JD 5640* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 8508* (FHO).

*Otiophora scabra* Zucc. ssp. *scabra*

Bushy, erect herb, up to 1 m. Leaves lanceolate, pseudo-verticillate. Flowers pinky-mauve. Fruits yellowish-brown.

**Flowering:** January. **Habitat:** Rocky, stunted woodland. **Altitude:** c. 1250 m. **Distribution:** D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Foot of Cilemba Cliffs, *Chapman JD & Chapman EG 7146* (FHO).

*Oxyanthus speciosus* DC.

ssp. *stenocarpus* (K.Schum.) Bridson

Evergreen, understorey tree, usually up to about 15 m tall but has been recorded to 27 m. Inflorescences many-flowered. Flowers white, with a

long (up to 4 cm), narrow corolla tube. Fruits skittle-shaped, about 4 cm long.

**Flowering:** October-December. **Fruiting:** Fruits recorded on specimens in March, June, July, October, December. Sometimes at the same time as the flowers. **Habitat:** Evergreen forest. **Altitude:** 800-1800 m. **Distribution:** On the eastern side of Africa from Ethiopia to South Africa.

**Localities:** Nakolu Stream, at Lauderdale boundary, *Chapman JD & Chapman EG 6718* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6943* (FHO). Likabula Valley, source of Nasato Stream, *Chapman JD & Chapman EG 7298* (FHO). Chiphalombe Stream gorge, *Chapman JD & Chapman EG 7891* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 8215* (FHO). Mchese Mt., Nampende Valley (east), *Chapman JD & Chapman EG 9142* (FHO).

*Pauridiantha symplocoides* (S.Moore) Bremek.

Small, understorey tree, up to about 7 m high. Leaf blades lanceolate, narrowly acuminate at the apex. 1-3 small, white flowers in the axils of the leaves.

**Flowering:** September. **Fruiting:** November. **Habitat:** Forest. **Altitude:** 1700-1950 m. **Occurrence:** Common. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Western side of Mchese Mt., head of the Napolo Stream, *Chapman JD & Chapman EG 8695* (FHO). Mchese Mt., Nampende Valley (East), *Chapman JD & Chapman EG 9144* (FHO). Chisongeli Forest, below the Manene extension, *Chapman JD & Chapman EG 9312* (FHO).

*Pavetta chapmanii* Bridson

Small, understorey tree, up to 12 m tall. Leaves oblanceolate, or sometimes elliptic, up to 12 cm long, acuminate apex. Flowers white in dense, terminal inflorescences on long inflorescence branches (5-13 cm). Fruits black when ripe.

**Flowering:** September-November. **Fruiting:** May **Habitat:** Montane forest. **Altitude:** 950-2100 m. **Distribution:** S. Malawi and neighbouring Mozambique.

**Localities:** Head of Likulezi Valley, *Chapman JD 487*, *Chapman JD & Patel IH 5787* (FHO). Crater Gorge, *Chapman JD 6652* (FHO). Crater Gorge, Little Mulosa River, *Chapman JD & Chapman EG 8095* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 8221* (FHO). Head of the Big Ruo Valley, *Chapman JD & Chapman EG 9382* (FHO).

*Pavetta crassipes* K.Schum.

Small tree, up to about 7 m high. Leaves clustered towards the apex of the branches, opposite or in 3s, blades linear-lanceolate up to 30 cm long, pock-marked for the whole of their length. Inflorescence of terminal corymbs. Fruits black.

**Fruiting:** March-May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 700-900 m. **Occurrence:** Occasional. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula, *Chapman JD 346* (FHO). Eldorado, foot of Chitagoni Hill, *Chapman JD & Chapman EG 8460*



(FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9081* (FHO).

***Pavetta gardeniifolia* Hochst ex A.Rich.**

Small tree, up to 4 m tall. Leaves elliptic to obovate, at ends of short lateral branches, dotted with bacterial nodules. Flowers white. Fruits black.

**Flowering:** January. **Fruiting:** March-August. **Habitat:** Lithophytic forest, forest edges, *Brachystegia* woodland, rocky outcrops. **Altitude:** 700-1320 m. **Distribution:** Widespread in tropical Africa, South Africa (Transvaal, KwaZulu-Natal) and Namibia.

**Localities:** Above the H. Q. of N.A. Nkanda, *Chapman JD 357* (FHO). Chambe Peak West Face, *Chapman JD & Chapman EG 7091* (FHO). Likabula Valley, Chapaluka Stream crossing, *Chapman JD & Chapman EG 7114* (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7381* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9075* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9244* (FHO).

***Pavetta klotzschiana* K.Schum.**

Shrub, up to about 3 m high. Leaves papery, narrowly obovate, apex obtuse to acute. Flowers white. Calyx lobes linear-lanceolate, pubescent. Corolla tube 1-1.8 cm long.

**Flowering:** December. **Habitat:** Stream-fringing forest. **Altitude:** c. 650 m. **Distribution:** S. Malawi, N. Mozambique and N. Zimbabwe.

**Localities:** Between Glenorchy and Likabula forestry depot, *Chapman JD & Chapman EG 6964* (FHO).

***Pentas purpurea* Oliv.**

Herb, up to about 45 cm high but may reach 1 m. Leaves in pairs, elliptic to ovate. Flowers purple, in dense, globular heads.

**Habitat:** Montane grassland. **Altitude:** c. 1950 m. **Distribution:** Guinea, Nigeria, Cameroon, D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya Plateau, *Chapman JD & Chapman EG 8289* (MO).

***Pentas zanzibarica* (Klotzsch) Vatke**

ssp. *milangiana* (Verdc.) Verdc.

Shrubby herb, up to 2 m high, usually with 1-2 stems from a woody rootstock. Stems very leafy. Leaves densely hairy, venation distinctly raised on lower surface. Flowers white, white tinged with purple or pinkish-purple.

**Flowering:** May-February. **Habitat:** Forest edges amongst bracken and grass, shrubberies. **Altitude:** 1050-2150 m. **Distribution:** Mt. Mulanje in Malawi and Ribáuè and Serra Tumbine in Mozambique.

**Localities:** Satwe Stream, on the Lichenya path, Likabula Valley, *Chapman JD & Chapman EG 7187* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7969* (FHO). Thuchila Shelf, *Chapman JD & Patel IH 5747* (FHO).

***Polysphaeria lanceolata* Hiern**

Spreading shrub, up to 5 m high. Narrowly lanceolate, glabrous leaves. Flowers in axillary clusters, white and slightly scented. Fruits ripening glossy black.

**Flowering:** November-December. **Fruiting:** January-July. **Habitat:** Understorey of riverine fringing forest or woodland. **Altitude:** 650-1000 m. **Occurrence:** Common. **Distribution:** Kenya, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Chitakali Stream, in the tea estate, *Chapman JD & Chapman EG 6948* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7685* (FHO). Phalombe River, *Chapman JD & Chapman EG 7845* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8475* (FHO).

***Psychotria capensis* (Eckl.) Vatke**

ssp. *riparia* (K.Schum. & K.Krause) Verdc.

var. *riparia*

Shrub or small tree, up to 4 m high, with pale, finely ridged stems. Leaves, up to 17 cm long, elliptic, glabrous. Flowers white, subsessile. Fruits red.

**Flowering:** November-May. **Fruiting:** January-May. **Habitat:** Forest edge or stream fringing forest. **Altitude:** 850-1500 m. **Distribution:** S. Malawi and Mozambique.

**Localities:** West branch of the Chitakali Stream, where the Boma Path crosses, *Chapman JD & Chapman EG 6876* (FHO). Chambe Peak, *Chapman JD & Chapman EG 7090* (FHO). Nasato Stream source, below Cilemba, *Chapman JD & Chapman EG 7414* (FHO). Likulezi Valley, Ng'ono waterfall, *Chapman JD & Chapman EG 7531* (FHO).

***Psychotria ealaensis* De Wild.**

Woody climber reaching the canopy. Leaf blades elliptic, acuminate, glabrous when mature. Flowers creamy white, in much-branched panicles.

**Flowering:** August. **Fruiting:** September. **Habitat:** Evergreen forest. **Altitude:** 1400-1950 m. **Distribution:** Cameroon, Gabon, D.R. Congo, Uganda, Tanzania, Malawi and Mozambique.

**Localities:** Chiphalombe River Gorge, *Chapman JD & Chapman EG 7921* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8065* (FHO).

***Psychotria kirkii* Hiern**

Sub-shrub, up to 1 m high. Leaves elliptic, dotted with dark green nodules. Flowers creamy-white. Fruits glossy, bright red.

**Fruiting:** March-June. **Habitat:** *Brachystegia* woodland, among grass, bracken and shrubs or in woodland coppice in cultivated land. **Altitude:** 650-1300 m. **Distribution:** From S. Ethiopia down the eastern side of Africa as far as Mozambique.

**Localities:** Below the Linji cliffs, *Chapman JD & Chapman EG 7328* (FHO). Likulezi River, Likulezi Farm, *Chapman JD & Chapman EG 7430* (FHO). Near Malawi Tea Factory, *Chapman JD & Chapman EG 8424* (FHO). Likabula Valley, along the Lichenya path, *Chapman JD & Chapman EG 8529*



(FHO). Mchese Mt., Nampende Stream, *Chapman JD & Chapman EG 9119* (FHO).

***Psychotria linearisepala* E.M.A.Petit**

Shrub, up to 2 m high. Leaves elliptic, oblong-elliptic to almost round, discolorous, the lower surface densely pubescent. Flowers small, white, honey-scented. Fruits red.

**Flowering:** November-December. **Fruiting:** January-February. **Habitat:** Understorey in *Brachystegia* woodland and forest patches. **Altitude:** 850-1450 m. **Occurrence:** Common. **Distribution:** S. D.R. Congo, S. Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Below the west face of Chambe Peak, *Chapman JD & Chapman EG 7100* (FHO). Lower slopes (not specified), *Chapman JD & Chapman EG 7178* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8929* (FHO). Approach to Chambe West Face Shelf, *Chapman JD & Chapman EG 8973* (FHO).

***Psychotria mahonii* C.H.Wright**

Small, slender tree, up to 9 m high. Leaves elliptic, very shiny. Flowers white. Fruits red.

**Flowering:** November-December. **Fruiting:** November-December. **Habitat:** Understorey of submontane forest. **Altitude:** c. 1700-1800 m. **Distribution:** D.R. Congo, Rwanda, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Big Ruvo Valley, *Chapman JD & Chapman EG 9386* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9442* (FHO).

***Psychotria peduncularis* (Salisb.) Steyerl.**

Small shrub, up to 1.5 m high. Leaves elliptic or narrowly elliptic, glabrous. Flowers small, white, in capitate inflorescences surrounded by an entire or lobed involucre of bracts.

**Flowering:** December. **Habitat:** Riverine forest. **Altitude:** c. 650 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Chitakali Stream, at the tea estate bridge, *Chapman JD & Chapman EG 6951* (FHO).

***Psychotria pumila* Hiern var. *pumila***

Sub-shrub, up to 50 cm high. Leaves narrowly elliptic, dark, glossy green. Fruits scarlet.

**Fruiting:** April. **Habitat:** Between rocks in forest on regularly flooded river bank. **Altitude:** c. 900 m. **Occurrence:** Very locally abundant. **Distribution:** D.R. Congo, S. Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Ruvo Gorge, *Chapman JD & Chapman EG 8445* (FHO).

***Psychotria* sp. A**

Verdcourt, *Flora Zambesiaca* 5(1):27(1989)

Shrub, 30-150 cm high. Narrow oblong-elliptic leaves. Flowers small, white. Fruits red.

**Flowering:** March. **Fruiting:** March-May. **Habitat:** Riverine evergreen forest. **Altitude:** c. 850 m. **Comment:** Further material is required to determine whether or not this is

different from *P. pumila* var. *pumila*. If it is, it is endemic to Mt. Mulanje.

**Localities:** Likabula Valley river ford, by the forestry depot, *Chapman JD & Chapman EG 7349* (FHO).

***Psychotria zombamontana* (Kuntze) E.M.A.Petit**

Shrub or small tree, up to 7 m high. Flowers small, white, in dainty, branched, terminal inflorescences.

**Flowering:** September-December. **Fruiting:** June-September. **Habitat:** Understorey of evergreen forest. **Altitude:** 1700-2000 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal).

**Localities:** Lichenya Plateau, C.C.A.P. cottage, *Chapman JD & Chapman EG 6971* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8073* (FHO). Mchese Mt., Nampende Valley (East), *Chapman JD & Chapman EG 9146* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9449* (FHO).

***Psydrax kraussoides* (Hiern) Bridson**

Syn. *Canthium kraussoides* Hiern;

*C. malacocarpum* (K.Schum. & K.Krause) Bullock

Sprawling shrub or woody climber. Coriaceous leaves in pairs. Flowers white in axillary inflorescences, shortly pedunculate but with longer, slender pedicels. Fruits greyish-green, spherical.

**Flowering:** November-January. **Fruiting:** October-January. **Habitat:** Forest edge and transition woodland. **Altitude:** 700-1500 m. **Distribution:** Fairly widespread in tropical Africa as far south as Mozambique and Angola.

**Localities:** Lauderdale. Mulosa River below the Crater, *Chapman JD 6642* (FHO). Where Boma Path crosses the west branch of the Chitakali Stream, *Chapman JD & Chapman EG 6875* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6897* (FHO). Likabula Valley, Chapaluka River, *Chapman JD & Chapman EG 7078* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9483* (FHO).

***Psydrax livida* (Hiern) Bridson**

Syn. *Canthium lividum* Hiern; *C. huillense* Hiern

Small tree, up to 5 m high. Smooth pale grey bark, slightly fluted. Branches symmetrical and almost horizontal. Flowers small, white, borne in dense axillary corymbs.

**Flowering:** November. **Fruiting:** December-January. **Habitat:** Understorey of unburnt *Brachystegia* woodland. **Altitude:** 800-1050 m. **Distribution:** D.R. Congo, Burundi, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, Angola, Namibia and South Africa (Northern and North West Provinces).

**Localities:** Below the west (outer) face of Chambe Peak, *Chapman JD & Chapman EG 7088* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8930* (FHO).

***Psydrax parviflora* (Afzel.) Bridson**

ssp. *chapmanii* Bridson

Syn. *Canthium vulgare* (K.Schum.) Bullock

Tree, up to 25 m high. Straight, slightly fluted



bole. Bright green, shiny foliage. Flowers small, greenish-white.

**Flowering:** January. **Fruiting:** February-June. **Habitat:** Evergreen forest. **Altitude:** 1150-1850 m. **Distribution:** Malawi, Mozambique and Zimbabwe.

**Localities:** Chambe West Face Shelf, *Chapman JD & Chapman EG 7661* (FHO). Little Lichenya River, just above the Mini-Mini water intake, *Chapman JD & Chapman EG 8343* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8556* (FHO). Mchese Mt., Nanolo Stream, *Chapman JD & Chapman EG 8678* (FHO). Lichenya Plateau, *Chapman JD & Chapman EG 9463* (FHO). Lichenya Plateau, at the forestry hut, *Chapman JD & Chapman EG 9468* (FHO).

*Psydrax schimperiana* (A.Rich.) Bridson

ssp. *schimperiana*

Syn. *Canthium schimperianum* A.Rich.

Shrub or tree, up to 9 m high. Ascending branches. Young branchlets often slightly winged on the angles. Flowers greenish-yellow, borne in axillary, short-stalked inflorescences.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** 850-1300 m. **Distribution:** From Ethiopia, down the eastern side of Africa to Zambia and Malawi.

**Localities:** Foot of Cilemba Cliffs, *Chapman JD & Chapman EG 7147* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8966* (FHO).

*Pyrostria chapmanii* Bridson ssp. *chapmanii*

Tree, up to 20 m high. Straight bole, slight cucumber smell when slashed. Wide-spreading, regular, horizontally-held branches. Leaves coriaceous, dark green and glossy on the upper surface. Flowers small, cream.

**Flowering:** August-November. **Fruiting:** November. **Habitat:** Evergreen forest. **Altitude:** 900-1900 m. **Distribution:** Endemic to Mt. Mulanje.

**Localities:** Nakolu Gorge, *Chapman JD & Chapman EG 6768* (FHO). West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6907* (FHO). Chambe Shelf, above Mwana Mlanje, *Chapman JD & Chapman EG 7610* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7949* (FHO). Chiphalombe Shelf, *Chapman JD & Chapman EG 8067* (FHO). Nessa Path, Lichenya Plateau, *Chapman JD & Chapman EG 8198* (FHO). Mchese Mt., Nthambi Stream above Misomali Nkhulambe area, *Chapman JD & Chapman EG 8831* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8972* (FHO). Chisongeli Forest, Muluzi catchment, *Chapman JD & Chapman EG 9347* (FHO). Chapaluka Path, *Chapman JD & Chapman EG 9542* (FHO).

*Rothmannia englerana* (K.Schum.) Keay

Small tree, up to about 8 m high. Leaves coriaceous, pubescent beneath, elliptic to obovate. Flowers white with purple stippling at the throat, held in pendulous, terminal inflorescences. Fruit globose, rust-coloured.

**Flowering:** September. **Fruiting:** September-April. **Habitat:** *Brachystegia* woodland. **Altitude:** 700-1000 m. **Occurrence:** Fairly common. **Distribution:** D.R. Congo, Burundi, Tanzania, Zambia, Malawi, Mozambique and Angola.

**Localities:** Mt. Mulanje, *Chapman JD 432* (FHO). Mchese Mt., Namajani River, *Chapman JD & Chapman EG 8872* (FHO). Mini-Mini, *Chapman JD & White F 8436* (FHO).

*Rothmannia fischeri* (K.Schum.) Bullock

Slender, lightly-branched tree, up to 25 m high. Flowers solitary, creamy-white with maroon spots in throat. Fruit spherical, up to 7 cm in diameter, green mottled with paler green.

**Flowering:** September. **Fruiting:** June-February. **Habitat:** Forest or forest edge. **Altitude:** 1300-1700 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Zimbabwe and South Africa (Transvaal).

**Localities:** Likulezi Valley, *Chapman JD 462* (FHO). Phalombe River, below the gorge, *Chapman JD & Chapman EG 7958* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8553* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8679* (FHO). Mchese Mt., Nthambi Gorge above Misomali village, *Chapman JD & Chapman EG 8848* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9223* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9336* (FHO). Lichenya Plateau, *Chapman JD & Tawakali EJ 5533* (FHO).

*Rothmannia manganjae* (Hiern) Keay

Shrub or slender tree up to 20 m high. Broadly elliptic to obovate leaves in twos or threes. Flowers white with pinkish-purple spots at throat, fragrant. Fruit almost globular, up to 4.5 cm in diameter, green turning blackish.

**Flowering:** July-September. **Fruiting:** December-August. **Habitat:** Riparian, lithophytic forest, forest edge and closed *Parinari-Albizia* woodland. **Altitude:** 600-1200 m. **Occurrence:** Fairly common. **Distribution:** Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Entrance to the Crater, *Chapman JD 6478* (FHO). Chitakali, *Chapman JD & Chapman EG 6959* (FHO). Likabula Valley, source of Nasato Stream, *Chapman JD & Chapman EG 7305* (FHO). Ruu, along Ruu River, *Chapman JD & Chapman EG 7480* (FHO). Phalombe River, *Chapman JD & Chapman EG 7813* (FHO). Western slopes of Mchese Mt., Namajani Valley, *Chapman JD & Chapman EG 8612* (FHO).

*Rothmannia urcelliformis* (Schweinf. ex Hiern)

Bullock

Tree, up to about 10 m high. Leaves elliptic to obovate-elliptic, very sparsely pubescent on both surfaces. Flowers solitary, cream with magenta stippling in the throat, fragrant. Fruit green, up to 8 cm long × 9 cm wide.

**Flowering:** September. **Fruiting:** September. **Habitat:** Forest. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa as far south as Mozambique and Angola. **Localities:** Entrance to Crater, *Chapman JD 6477* (FHO).



***Rutidea fuscescens* Hiern**

Spreading shrub or woody climber. Flowers white, scented, with ellipsoid stigma well exerted from the corolla tube.

**Flowering:** November. **Fruiting:** August. **Habitat:** Open, rocky river bank or edge of stream-fringing forest. **Altitude:** 1350-1850 m. **Occurrence:** Frequent. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** East branch of the Chitakali Stream, *Chapman JD & Chapman EG 6900* (FHO). Phalombe River Gorge, *Chapman JD & Chapman EG 7952, 7961* (FHO).

***Rutidea orientalis* Bridson**

Climbing shrub, reaching 8 m high. Young stems and veins on lower leaf surface covered with golden hairs. Stipules divided into several fimbriae. Flowers in dense inflorescences. Fruits ripening orange.

**Flowering:** September. **Fruiting:** September. **Habitat:** Margin of riparian forest. **Altitude:** c. 1300 m. **Distribution:** D.R. Congo, Rwanda, Burundi, Uganda, Kenya, Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Above Chisambo, along the Muluzi Stream, *Chapman JD & Chapman EG 9270* (FHO).

***Rytigynia macrura* Verdc.**

Shrub or small tree, up to 4 m high, with regular, horizontal branches. Thin, broadly elliptic leaves, somewhat discolourous.

**Habitat:** Riverine forest. **Altitude:** 1200-1400 m. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, source of Nasato, *Chapman JD & Chapman EG 7307* (FHO). Entrance to the Phalombe Gorge, *Chapman JD & Chapman EG 7874* (FHO).

***Rytigynia uhligii* (K.Schum. & K.Krause) Verdc.**

Arching shrub or small, slender tree, up to usually about 7.5 m high. Stems with reddish-brown bark peeling to reveal pale grey underneath. Leaves thin with long acuminate tip. Flowers greenish-white, 1 or 2 in leaf axils. Fruits green, flattened spherical.

**Flowering:** September-December. **Fruiting:** May-September. **Habitat:** Riverine forest understorey or forest edge. **Altitude:** 700-1650 m. **Distribution:** East Africa, Malawi, Mozambique and E. Zimbabwe. **Comments:** One tree (*Chapman 9327*) recorded as reaching almost 12m in height. It also has smaller leaves than the other collections from Mt. Mulanje.

**Localities:** Esperanza, *Chapman JD & Chapman EG 7767* (FHO). Ruu Gorge, *Chapman JD & Chapman EG 8310* (FHO). Mchese Mt., gorge of the Nthambi Stream, *Chapman JD & Chapman EG 8830* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9091* (FHO). Chisongeli forest, *Chapman JD & Chapman EG 9327* (FHO).

***Sericanthe andongensis* (Hiern) Robbr.**

var. *andongensis*

Regularly branched shrub or small tree, up to about 4 m high. Deciduous, elliptic to obovate leaves falling around flowering time. Flowers white, fragrant. Fruits spherical, green ripening to orange.

**Flowering:** July-September. **Fruiting:** April-August. **Habitat:** *Brachystegia* woodland, riverine forest and forest edge. **Altitude:** 850-1250 m. **Occurrence:** Fairly common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Angola and South Africa (Transvaal).

**Localities:** Likulezi River Gorge, *Chapman JD & Chapman EG 7680* (FHO). Western slopes of Mchese Mt., *Chapman JD & Chapman EG 8663* (FHO). Mchese Mt., in the Fort Lister Gap., *Chapman JD & Chapman EG 8726* (FHO). Likabula Valley (low down), *Chapman JD & Chapman EG 9258* (FHO).

***Sericanthe andongensis* (Hiern) Robbr.**

var. *mollis* Robbr.

Similar to var. *andongensis* but the leaves softly hairy below.

**Altitude:** c. 1200-1300 m. **Distribution:** Angola to Malawi. **Localities:** Chiphalombe Stream, *Chapman JD & Chapman EG 8086* (FHO). Mchese Mt., western slopes above the Namajani Stream, *Chapman JD & Chapman EG 8609* (FHO).

***Spermacoce dibrachiata* Oliv.**

Perennial herb, up to 60 cm high. Flowers purple, in dense apical heads subtended by two large, lanceolate, green bracts.

**Flowering:** April. **Habitat:** Amongst grass clumps in *Brachystegia* woodland, along old road line. **Altitude:** c. 1000 m. **Occurrence:** Locally common. **Distribution:** D.R. Congo, Rwanda, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9030* (FHO).

***Tapiphyllum velutinum* (Hiern) Robyns**

Shrub or small tree, up to 5 m high. Young shoots densely velvety tomentose, later glabrous and dark reddish-brown. Leaves elliptic to rounded, discolourous, densely velvety tomentose, especially below. Flowers greenish-yellow, in dense axillary clusters. Fruits subglobose, green ripening to orange.

**Flowering:** November. **Fruiting:** January. **Habitat:** Edge of riverine forest and *Brachystegia* woodland. **Altitude:** 850-1200 m. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula River, *Chapman JD & Chapman EG 7070* (FHO). Western slopes of Mchese Mt., *Chapman JD & Chapman EG 8619* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8939* (FHO).



*Tarenna pavettoides* (Harv.) Sim  
ssp. *affinis* (K.Schum.) Bridson

Small tree, up to about 12 m high. Leaves oblanceolate to obovate. Flowers white with a corolla tube up to 6.5 mm long. Fruits glaucous-green, turning black when dry.

**Flowering:** July-December. **Fruiting:** March-August. **Habitat:** Forest. **Altitude:** 850-1550 m. **Distribution:** From the D.R. Congo, Rwanda, Burundi, Uganda and Kenya southwards to the eastern Cape in South Africa.

**Localities:** Head of the Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6742* (FHO). Likabula Valley, below Cilemba cliffs, *Chapman JD & Chapman EG 7374* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 7700* (FHO). Chiphalombe River Gorge, *Chapman JD & Chapman EG 7923* (FHO). Western foot of Mchese Mt., along the Namajani Stream, *Chapman JD & Chapman EG 8655* (FHO).

*Tricalysia acocantheroides* K.Schum.

Shrub or small tree, usually up to about 4 m but occasionally to 15 m high. Leaves slightly coriaceous, dark green and glossy above, mucronulate. Flowers white, sweetly scented. Fruits green, ripening to orange.

**Flowering:** September-May. **Fruiting:** March-August. **Habitat:** Understorey and edge of riparian evergreen forest. **Altitude:** 650-1900 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Likulezi, Ng'ono waterfall, *Chapman JD 499* (FHO). Mchese Mt., at head of spur between Manuo & Namizinjwa Streams, *Chapman JD 591* (FHO). By the Boma Path to Lichenya Plateau, *Chapman JD & Chapman EG 6917* (FHO). Nasato Stream, below Cilemba, *Chapman JD & Chapman EG 7155* (FHO). Western slopes of Mchese Mt., along the Napolo Stream, *Chapman JD & Chapman EG 8669* (FHO). Fort Lister Forestry Office to Sombani Plateau, *Chapman JD & Chapman EG 8754* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9135* (FHO). Chisongeli Forest, *Chapman JD & Chapman EG 9326* (FHO).

*Tricalysia coriacea* (Benth.) Hiern

Shrub or small tree, up to 12 m high. Coriaceous leaves, broadly or narrowly elliptic. Flowers white, fragrant. Fruits orange-red when ripe.

**Flowering:** May-December. **Fruiting:** October-November. **Habitat:** Streambank tree, usually at forest edge. **Altitude:** 650-1350 m. **Distribution:** Widespread in the Guineo-Congolian and Zambesian parts of tropical Africa. **Comments:** Robbrecht considers the narrow-leaved plants from N. Zambia (one site), Mt. Mulanje and mountains bordering Mozambique and Zimbabwe to be ssp. *angustifolia* (Garcia) Robbr. (syn. *Tricalysia nyassae* Hiern var. *angustifolia* Garcia).

**Localities:** Lauderdale, below the Crater Gorge, Little Mulosa River, *Chapman JD 6639* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6954* (FHO). Likulezi River, *Chapman JD & Chapman EG 7634* (FHO). Phalombe River, *Chapman JD & Chapman EG 7846* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8465* (FHO). Western slopes of

Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8660* (FHO). Above Mulosa Drift Pine Plantation, *Chapman JD & Chapman EG 8868* (FHO).

*Tricalysia pallens* Hiern

Shrub or small tree, up to 7 m high. Leaves elliptic, subcoriaceous. Flowers greenish-white, small in dense, subsessile axillary inflorescences. Fruit ripening shiny orange.

**Flowering:** April-October. **Fruiting:** November. **Habitat:** Riparian forest. **Altitude:** 850-1200 m. **Distribution:** Widespread in tropical Africa, as far south as Mozambique and Zimbabwe.

**Localities:** Mulosa (Crater) Gorge, above Lauderdale, *Chapman JD 6535* (FHO). Above Esperanza, near source of the Mpamba Stream, *Chapman JD & Chapman EG 6705* (FHO). Chitakali Stream, at Boma Path, *Chapman JD & Chapman EG 6843* (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7309* (FHO). Thuchila River, *Chapman JD & Chapman EG 7711* (FHO). Likulezi River Gorge, *Chapman JD & Chapman EG 8012* (FHO).

*Vangueria apiculata* K.Schum.

Small tree, up to 5 m high. Young branchlets reddish-brown, lenticellate. Leaves ovate-lanceolate, acuminate. Fruits brown, subglobose, up to 2.5 cm diameter.

**Fruiting:** June. **Habitat:** Forest. **Altitude:** c. 1700 m. **Distribution:** Down the eastern side of tropical Africa from Ethiopia to Zimbabwe, including the D.R. Congo.

**Localities:** Mchese Mt., Nampende Valley (east), *Chapman JD & Chapman EG 9147* (FHO).

*Vangueria infausta* Burch.

ssp. *rotundata* (Robyns) Verdc. var. *rotundata*

Small tree, up to 6 m high. Leaves densely pubescent on both surfaces, well developed at flowering time. Flowers green. Corolla apiculate in bud. Fruit globular, light brown, with a pleasant taste.

**Flowering:** November. **Fruiting:** November-March. **Habitat:** Woodland understorey. **Altitude:** 800-1250 m. **Distribution:** Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Boma Path, *Chapman JD & Chapman EG 6806* (FHO). Likabula Valley, Chapaluka track, *Chapman JD & Chapman EG 7356* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8937* (FHO). Limbuli, *Chapman JD & Chapman EG 9414* (FHO).

*Vangueria randii* S.Moore ssp. *randii*

Arching shrub, up to 4 m high. Leaves glabrous, thin. Fruit ripening red.

**Fruiting:** April. **Habitat:** At the edge of a termite mound in woodland. **Altitude:** c. 800 m. **Distribution:** Zambia, Malawi, Mozambique, Zimbabwe and Botswana.

**Localities:** Likabula Valley, near the forestry office, *Chapman JD & Chapman EG 9517* (FHO).



## RUTACEAE

Refs. Mziray 1992; Waterman, 1975; White & Pannell, 1996.

### *Clausena anisata* (Willd.) Benth.

Small tree, up to 13 m high but often smaller. Pinnate leaves, leaflets alternate, elliptic, asymmetric. Crushed leaves have a pungent smell. Flowers white, in axillary inflorescences.

**Flowering:** September–November. **Habitat:** Forest edge and forest understorey. **Altitude:** 550–1900 m. **Distribution:** Sierra Leone to Ethiopia and Sudan, southwards to Cape Province in South Africa.

**Localities:** Lichenya F.R., T.A. Mabuka's, Milonde Court, *Chapman JD 6621* (FHO). Linji (Lichenya) Plateau, *Chapman JD & Chapman EG 6985* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 8248* (FHO). Chisongeli Forest, below the Manene extension, *Chapman JD & Chapman EG 9310* (FHO).

### *Toddalia asiatica* (L.) Lam.

Canopy liane with the stem beset with prominent corky bosses tipped with recurved prickles. Smaller branches viciously prickly. Flowers greenish-cream. Fruit fleshy, orange-red. The whole plant is strongly aromatic.

**Flowering:** December. **Fruiting:** July. **Habitat:** Forest. **Altitude:** 650–1400 m. **Distribution:** Ethiopia and Sudan to South Africa (Transvaal).

**Localities:** Lauderdale, upper boundary, *Chapman JD 6505* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6953* (FHO). Mchese Mt., Mbawa Valley, *Chapman JD & Chapman EG 9201* (FHO).

### *Vepris amaniensis* (Engl.) Mziray

Syn. *Teclea amaniensis* Engl.

Shrub or tree, up to 20 m high. Leaves simple, broadly elliptic with an acute or acuminate apex. Fruits ellipsoid, red.

**Fruiting:** November. **Habitat:** Forest. **Altitude:** 900–1100 m. **Distribution:** Kenya, Tanzania and Malawi (Mt. Mulanje).

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD 6636* (FHO). Source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6782* (FHO).

### *Vepris bachmannii* (Engl.) Mziray

Syn. *Oricia bachmannii* (Engl.) I. Verd.

Evergreen tree, up to 25 m high. Leaves trifoliate, leaflets oblong with a rounded or acuminate apex, glabrous. Flowers creamy-white, very fragrant.

**Flowering:** September. **Habitat:** Riparian forest. **Altitude:** 900–1650 m. **Distribution:** Malawi to South Africa (eastern Cape Province).

**Localities:** Source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6794* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8681* (FHO). Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG*

8880 (FHO). Chisongeli forest, Muluzi catchment, *Chapman JD & Chapman EG 9345* (FHO).

### *Vepris elegantissima* F. White & C. M. Pannell

Tree up to 12 m high, with ascending branches. Leaves trifoliate, smelling of citrus when crushed. Leaflets lanceolate, greyish-green above, yellowish-green below. Flowers small, pale yellow. Fruits ellipsoid, fleshy, red when ripe.

**Flowering:** September–October. **Fruiting:** October–November. **Habitat:** Riparian forest, on rocky ground. **Altitude:** c. 900–1000 m. **Occurrence:** Very local. **Distribution:** Endemic to Mt. Mulanje, Malawi. **Comments:** Only known from this locality.

**Localities:** Mulosa Stream, above the Boma Water Intake, Lauderdale Crater, *Chapman JD 6551* (FHO). Source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6785* (FHO). Little Mulosa River, at the entrance to the Crater, *Chapman JD & Chapman EG 8010* (FHO).

### *Vepris nobilis* (Delile) Mziray

Syn. *Teclea nobilis* Delile

Tree, up to 25 m high. Leaves trifoliate with conspicuous gland dots. Leaflets elliptic, broadly attenuate at apex. Flowers in axillary and terminal inflorescences. Fruits ovoid, red.

**Flowering:** May–September. **Habitat:** Forest. **Altitude:** 1250–1850 m. **Distribution:** Ethiopia, Somalia and Sudan to Mozambique.

**Localities:** Chambe West Face Shelf, *Chapman JD & Chapman EG 7664* (FHO). Chiphalombe Stream, just below the gorge, *Chapman JD & Chapman EG 7990* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 8876* (FHO). Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG 8886* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9104* (FHO). Mchese Mt., *Chapman JD & Chapman EG 9199* (FHO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9466* (FHO).

### *Vepris stolzii* I. Verd.

Tree, up to 15 m high. Leaves trifoliate, smelling of citrus when crushed. Flowers white. Fruits globose and ridged. Similar to *V. nobilis* but the gland dots are not conspicuous.

**Flowering:** September–October. **Fruiting:** September. **Habitat:** Forest, often on rocky streambanks. **Altitude:** 900–1900 m. **Distribution:** Central African Republic, E. D.R. Congo, Rwanda, Uganda, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Source of Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6786* (FHO). Little Mulosa River, at the entrance to the Crater, *Chapman JD & Chapman EG 8008* (FHO). Chisongeli Forest (West), *Chapman JD & Chapman EG 9296* (FHO).

### *Vepris trichocarpa* (Engl.) Mziray

Syn. *Teclea trichocarpa* (Engl.) Engl.

Small tree, up to 15 m high with a dense crown. Pale grey bark flaking to leave pale patches.



Branchlets hairy. Leaves trifoliate. Flowers in clusters in leaf axils, buds densely hairy.

**Flowering:** June-July. **Habitat:** Rocky slopes in riverine forest. **Altitude:** 1100-1400 m. **Distribution:** E. D.R. Congo, Uganda and Kenya to South Africa (E. Cape Province).

**Localities:** Below Chambe West Face, *Chapman JD & Chapman EG 7757* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9173* (FHO).

*Zanthoxylum chalybeum* Engl. var. *chalybeum*  
Syn. *Fagara chalybea* (Engl.) Engl.

Deciduous shrub or small tree, up to 6 m high. Leaves pinnate, clustered at the apex of the sturdy, slightly prickly stem. Crushed leaves have a strong citrus smell. Inflorescences are borne at the base of the new branches below the leaves.

**Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Localities:** Low down the Likabula Valley, *Chapman JD & Chapman EG 9513* (FHO). **Distribution:** Ethiopia and Somalia to Zimbabwe.

*Zanthoxylum gillettii* (De Wild.) P.G. Waterman  
Syn. *Fagara gillettii* De Wild.

Tree, up to 20 m high. The grey bark is beset with spine-tipped bosses. Leaves pinnate. Leaflets leathery, broadly elliptic, attenuate at apex, very asymmetric at the base.

**Habitat:** Forest. **Altitude:** c. 1400 m. **Distribution:** Sierra Leone to Sudan, the D.R. Congo, Uganda and Kenya. **Localities:** Chisongeli Forest, *Chapman JD & Chapman EG 9281* (FHO).

## SANTALACEAE

*Osyridicarpos schimperianus* (A.Rich.) A.DC.

Spindly climbing or scrambling shrub. Stem markedly ridged. Small, pale yellow flowers. Fruits white.

**Flowering:** November-May. **Fruiting:** May. **Habitat:** Evergreen cedar forest, riparian forest, pathsides, rocky river banks. **Altitude:** 850-1700 m. **Distribution:** The eastern side of Africa from Ethiopia to South Africa.

**Localities:** West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6885* (FHO). Lichenya path, in the Likabula Valley, *Chapman JD & Chapman EG 6998* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8482* (FHO).

*Osyris lanceolata* Hochst. & Steud.

Shrub or tree, up to 8 m high. Branchlets ridged and 4-angled. Leaves glaucous. Flowers small, greenish-yellow. Fruits fleshy, bright orange-red.

**Flowering:** August-February. **Fruiting:** January-May. **Habitat:** *Brachystegia* woodland and rocky scrub. **Altitude:** 950-2300 m. **Occurrence:** Common but sporadic. **Distribution:** Eastern Africa from Ethiopia to the Cape Peninsula, South Africa, as well as Zambia and Namibia.

**Localities:** Likulezi Valley, at Likulezi Ng'ono waterfall, *Chapman JD & Chapman EG 7538* (FHO). Entrance to the Phalombe Gorge, *Chapman JD & Chapman EG 7818* (FHO). Sombani Plateau, below the north east shoulder of Namisili, *Chapman JD & Chapman EG 8770* (FHO). Mchese Mt., Namajani Gorge, *Chapman JD & Chapman EG 8882* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9493* (FHO).

*Thesium nigricans* Rendle

Compact, rounded sub-shrub, up to about 60 cm high. Narrow leaves, spreading. Flowers solitary in leaf axils at tips of shoots, very small, white.

**Flowering:** August. **Habitat:** Forest margins, shrubby rocky hillsides at high altitudes. **Altitude:** 1850-2150 m. **Distribution:** Malawi (Mulanje & Zomba Mts.), Mozambique (Gorongosa Mt.) and Zimbabwe (Inyanga to the Chimanimani Mts.).

**Localities:** Beside path from Thuchulia Hut to Ruu Basin Saddle, *Chapman JD 418* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7970* (FHO). Sombani Plateau at the Sombani Hut, *Chapman JD & Chapman EG 8808* (FHO).

*Thesium whyteanum* Rendle

Shrub, usually up to 1 m high, sparsely branched above a bare stem. Pungent foliage. Leaves narrow, ascending. Flowers very small, greenish-white.

**Flowering:** May-December. **Habitat:** Montane grassland, especially on rocky hillsides. **Altitude:** 1350-2200 m. **Occurrence:** Widespread and common. **Distribution:** Mt. Mulanje, S. Malawi and Chimanimani Mts., E. Zimbabwe. **Comments:** One specimen collected (*Chapman & Patel 5779*) reached 3 m high.

**Localities:** Along path from Chambe, *Chapman JD 5676* (FHO). Slopes of Cilemba Peak, above the Linji Plateau, *Chapman JD 6064* (FHO). Boma Path to Lichenya Plateau, *Chapman JD & Chapman EG 6912* (FHO). Chinzama, *Chapman JD & Patel IH 5779* (FHO).

## SAPINDACEAE

Ref. Davies & Verdcourt, 1998.

*Allophylus africanus* Beauv.

Shrub or small tree, up to 5 m or more high. Trifoliate leaves, the terminal leaflet largest. Flowers small, cream or yellow, in lax, branched, catkin-like inflorescences.

**Flowering:** February-March. **Fruiting:** March-May. **Habitat:** Woodland, dominated by either *Brachystegia* or *Parinari*. **Altitude:** 650-850 m. **Distribution:** Widespread in **Localities:** Fort Lister Gap, *Chapman JD 573* (FHO). Near Likabula House C.C.A.P., near forestry depot, *Chapman JD & Chapman EG 7193* (FHO). Eldorado, along the Thornwood (Ruu) estate boundary above Cixale Dam, *Chapman JD & Chapman EG 8414* (FHO).

*Allophylus chaunostachys* Gilg

Semi-scandent shrub or small arching tree, up to about 7 m high. Leaves trifoliate, the terminal



leaflet the largest. Small, greenish flowers in unbranched (usually), catkin-like inflorescences. Fruits ripen orange.

**Flowering:** December-May. **Fruiting:** July-September. **Habitat:** Understorey of riparian and montane forest, forest edge. **Altitude:** 900-1900 m., Nessa Path, *Chapman JD & Chapman EG 9451* (FHO). **Distribution:** E. D.R. Congo and Tanzania to South Africa (Transvaal).

**Localities:** Mulosa Stream, in the gorge leading to the Lauderdale Crater, *Chapman JD 6499* (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7347* (FHO). Phalombe River, below the gorge, *Chapman JD & Chapman EG 7877* (FHO). Chiphalombe Gorge, *Chapman JD & Chapman EG 7912* (FHO). Mchese Mt., western slopes, Napolo Valley, *Chapman JD & Chapman EG 8714* (FHO). Mchese Mt., Nthambi Gorge above Misomali, *Chapman JD & Chapman EG 8843* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9172* (FHO).

### *Aporrhiza paniculata* Radlk.

Syn. *Aporrhiza nitida* Gilg

Evergreen tree, up to 20 m high. Leaves pinnate, coriaceous. Flowers small, greenish-cream, in branched inflorescences. Fruits flat, with 2 lobes, softly hairy.

**Flowering:** October-November. **Fruiting:** October-December. **Habitat:** Riparian forest. **Altitude:** 550-750 m. **Occurrence:** Common. **Distribution:** Nigeria, Sudan, D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya F.R., T.A. Mabuka's Milonde Court, *Chapman JD 6579* (FHO). Below Esperanza, estate manager's house, *Chapman JD & Chapman EG 6910* (FHO). In tea belt below Mulanje, *Chapman JD & Chapman EG 7549* (FHO). Esperanza, on the bank of the Pamba Stream, *Chapman JD & Chapman EG 8110* (FHO).

### *Cardiospermum grandiflorum* Sw.

Slender, herbaceous climber with tendrils, reaching up to about 8 m. Stems hairy. Leaves bi-ternate. Flowers white with yellow centres. Fruits with 3 papery sections, each containing a black seed.

**Flowering:** April. **Fruiting:** November. **Habitat:** Forest edge. **Altitude:** 700-900 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Chitakali Stream, Chitakali, *Chapman JD & Chapman EG 6813* (FHO). Mpamba Stream, above Esperanza, *Chapman JD & Chapman EG 7486* (FHO).

### *Dodonaea viscosa* Jacq.

Shrub or small tree, up to about 6 m high. Leaves simple, narrowly elliptic, glabrous, covered with a resinous secretion. Flowers greenish-yellow. Fruits subcircular in outline, with 2 wings.

**Flowering:** December-May. **Fruiting:** June onwards. **Habitat:** Edge of forest or plantations, in thickets. **Altitude:** 950-2000 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Lichenya Plateau, *Chapman JD 5667* (FHO). Likabula Valley, Lichenya path, *Chapman JD & Chapman EG 6992* (FHO). Below the Linji cliffs, Likabula, *Chapman JD & Chapman EG 7015* (FHO). Likulezi River gorge, *Chapman JD & Chapman EG 7703* (FHO).

### *Filicium decipiens* (Wight & Arn.) Thwaites

Tree, up to 27 m high. Leaves pinnate, leaflets sessile, oblong-elliptic, rhachis broadly winged.

Fruits fleshy, green or red.

**Flowering:** October-December. **Fruiting:** January. **Habitat:** Stream-fringing forest or *Brachystegia* woodland. **Altitude:** 550-1350 m. **Distribution:** Ethiopia to Mozambique and Zimbabwe.

**Localities:** Below Chambe Peak, *Chapman JD 372* (FHO). Lichenya F.R. at T.A. Mabuka's Milonde Court, *Chapman JD 6585* (FHO). Likabula Valley, Chapaluka Stream crossing, *Chapman JD & Chapman EG 7113* (FHO). Nasato Stream, *Chapman JD & Chapman EG 7151* (FHO).

### *Haplocoelum foliolosum* (Hiern) Bullock

Deciduous tree, up to 35 m high. Dark grey bark flakes to expose pale brown patches. Leaves pinnate, leaflets obliquely-oblong. Flowers cream. Fruits orange to red.

**Flowering:** April-July onwards. **Fruiting:** November. **Habitat:** Forest, often near streams. **Altitude:** 800-1650 m. **Occurrence:** Common. **Distribution:** From Ethiopia and Sudan to Mozambique and Zimbabwe.

**Localities:** Head of the Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6744* (FHO). Chitakali Stream, *Chapman JD & Chapman EG 6941* (FHO). Chambe Peak, *Chapman JD & Chapman EG 7054* (FHO). Chambe Shelf, *Chapman JD & Chapman EG 7601* (FHO). Phalombe Gorge, *Chapman JD & Chapman EG 7869* (FHO). Mchese Mt., Napolo Stream, *Chapman JD & Chapman EG 8675* (FHO). Likabula Valley, source of the Nasato Stream below the Cilemba cliffs, *Chapman JD & Chapman EG 8963* (FHO).

### *Lecaniodiscus fraxinifolius* Baker

Small tree, up to 7 m high. Leaves pinnate, leaflets oblong-elliptic, papery. Flowers yellow. Fruits pinkish.

**Habitat:** Dry woodland. **Altitude:** c. 800 m. **Distribution:** From Somalia and Ethiopia to Mozambique and Zimbabwe. **Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9237* (FHO).

### *Pappea capensis* (Spreng.) Eckl. & Zeyh.

Tree, up to 15 m high. Leaves oblong, shortly pubescent, especially on the veins. Flowers small, greenish-yellow, in catkin-like inflorescences. Fruit subglobose.

**Flowering:** February-June. **Habitat:** Stream-fringing forest, forest/woodland interface and *Brachystegia* woodland. **Altitude:** 800-1000 m. **Distribution:** Eastern and southern tropical Africa and South Africa.

**Localities:** Likabula, beside road from forestry office to chief forestry officer's house, *Chapman JD & Chapman EG 7121* (FHO). Lower slopes, *Chapman JD & Chapman EG 7176*



(FHO). Thuchila River, at Malere Rock, *Chapman JD & Chapman EG 7707* (FHO). Northern foot of Mchese Mt., along the Nandiwo Stream, *Chapman JD & Chapman EG 8627* (FHO). Namitambo Valley, low down western wall of Chambe, *Chapman JD & Chapman EG 9555* (FHO).

### *Paullinia pinnata* L.

Soft-wooded climber or scrambler with paired, spirally-coiled tendrils at the base of the inflorescence. Leaves pinnate, leaflets with a dentate margin, rhachis winged. White flowers in catkin-like inflorescences.

**Flowering:** October-November. **Habitat:** Stream-fringing forest/woodland, forest or forest edge. **Altitude:** 850-1100 m.

**Distribution:** Widespread in tropical Africa.

**Localities:** Esperanza, Pamba Stream, *Chapman JD & Chapman EG 6707* (FHO). Chitakali, estate boundary, *Chapman JD & Chapman EG 6815* (FHO).

### *Zanha africana* (Radlk.) Exell

Tree, up to about 15 m high. Bark silvery-grey, flaking to reveal reddish-brown. Leaves pinnate, leaflets oblong-elliptic, rounded at apex. Petiole hairy. Flowers greenish. Fruit orange or yellow, hairy.

**Habitat:** Miombo woodland. **Altitude:** c. 900 m. **Occurrence:** Rare. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and S. Angola.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9128* (FHO).

### *Zanha golungensis* Hiern

Tree, up to 30 m high. Bark dark brown, flaking to leave light brown depressions. Leaves pinnate, leaflets elliptic-oblong, pointed at apex, dentate margin.

**Fructing:** October. **Habitat:** Forest, forest edge, woodland. **Altitude:** 550-1200 m. **Occurrence:** Occasional. **Distribution:** Widespread in tropical Africa.

**Localities:** Lichenya F.R., T.A. Mabuka's, Milonde Court, *Chapman JD 6616* (FHO). Between Glenorchy & Likabula timber depot, *Chapman JD & Chapman EG 6967* (FHO). Likabula Valley, source of the Nasato Stream below Cilemba, *Chapman JD & Chapman EG 7401* (FHO). Below Chambe West Face, *Chapman JD & Chapman EG 7760* (FHO). Phalombe River, *Chapman JD & Chapman EG 7851* (FHO). Mchese Mt., Nthambi Stream in the gorge above Misomali, *Chapman JD & Chapman EG 8834* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9112* (FHO). Namitambo Valley, low down the western slopes of Chambe, *Chapman JD & Chapman EG 9556* (FHO).

## SAPOTACEAE

Ref. Pennington, 1991.

### *Chrysophyllum gorungosanum* Engl.

Evergreen tree, up to 35 m high with a deeply fluted bole. Leaves coriaceous, acuminate at

apex, densely silvery or ferrugineous-hairy on lower surface. Fruits ellipsoid with dense reddish-brown pubescence.

**Fructing:** July-September. **Habitat:** Riparian forest. **Altitude:** 900-1750 m. **Distribution:** E. D.R. Congo, Rwanda, Burundi, East Africa, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Above Esperanza, Pamba Stream, *Chapman JD 6660* (FHO). Lower slopes at Nakolu Stream source, above Lauderdale, *Chapman JD & Chapman EG 6778* (FHO). Phalombe River, below the gorge, *Chapman JD & Chapman EG 7878* (FHO). Little Mulosa River, at the entrance to the Crater, *Chapman JD & Chapman EG 8007* (FHO). Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8683* (FHO).

### *Chrysophyllum viridifolium* J.M.Wood & Franks

Evergreen tree, up to 30 m high. Bole unbranched for 20 m. Bark smooth grey, with a silvery-grey diamond pattern. Lateral nerves of the leaves numerous, closely spaced and joined by a marginal vein.

**Habitat:** Forest. **Altitude:** c. 1400 m. **Distribution:** Kenya, Malawi, Mozambique, Zimbabwe, South Africa (KwaZulu-Natal) and Swaziland.

**Localities:** Chisongeli Forest, Muluzi Valley, *Chapman JD & Chapman EG 9304* (FHO).

### *Englerophytum magalismontanum* (Sond.) T.D.Penn.

Syn. *Bequaertiodendron magalismontanum* (Sond.) Heine & J.H.Hemsl.

Evergreen tree, up to 25 m high. Leaves broadly elliptic to narrowly obovate, with dense rusty-brown or silvery hairs below. Flowers pinkish-red, clustered on the old stems below the tufts of leaves. Fruits ellipsoid, fleshy, red.

**Flowering:** October-November. **Fructing:** December. **Habitat:** Riverine forest. **Altitude:** 900-1500 m. **Distribution:** Widespread in tropical Africa, South Africa (Transvaal, KwaZulu-Natal) and Swaziland.

**Localities:** Lower Mulosa (Crater) gorge, above Lauderdale tea factory, *Chapman JD 6536* (FHO). Above Esperanza, Pamba Stream, *Chapman JD & Chapman EG 6699* (FHO). Where Boma Path crosses the Chitakali Stream, *Chapman JD & Chapman EG 6878* (FHO).

### *Englerophytum natalense* (Sond.) T.D.Penn.

Syn. *Bequaertiodendron natalense* (Sond.) Heine & J.H.Hemsl.

Small tree, up to 10 m high. Leaves oblanceolate to narrowly-elliptic, apex fairly abruptly acuminate, lower surface very pale green. Unfolding leaves covered in short, reddish-brown hairs.

**Fructing:** October-November. **Habitat:** Forest understorey. **Altitude:** 800-950 m. **Distribution:** From East Africa to the eastern Cape in South Africa.



**Localities:** Entrance to Lauderdale Crater, *Chapman JD* 6479 (FHO). Above Esperanza, Pamba Stream, *Chapman JD* & *Chapman EG* 6688 (FHO). Nkolu Stream, above Lauderdale, *Chapman JD* & *Chapman EG* 6750 (FHO). Chitakali Stream, estate/F.R. boundary, *Chapman JD* & *Chapman EG* 6819 (FHO).

***Manilkara discolor* (Sond.) J.H.Hemsl.**

Evergreen tree, up to 30 m high. Leaves elliptic-ovate to obovate, clustered at branch ends. Lower surface silvery. Flowers yellow. Fruits ellipsoid, fleshy, yellow when ripe.

**Flowering:** July-October. **Fruiting:** November-December.

**Habitat:** Forest and forest edge, usually by a stream. **Altitude:** 900-1650 m. **Distribution:** Kenya and Tanzania to South Africa (KwaZulu Natal).

**Localities:** Source of Nakolu Stream, above Lauderdale, *Chapman JD* & *Chapman EG* 6788 (FHO). Chitakali Stream, *Chapman JD* & *Chapman EG* 6848 (FHO). Likabula Valley, Chapaluka Stream crossing, *Chapman JD* & *Chapman EG* 7115 (FHO). Nasato Stream, below Cilemba, *Chapman JD* & *Chapman EG* 7153 (FHO). Phalombe River, below the gorge, *Chapman JD* & *Chapman EG* 7837 (FHO). Chiphalombe Stream gorge, *Chapman JD* & *Chapman EG* 7890 (FHO). Western slopes of Mchese Mt., Chanda Mwani Stream, *Chapman JD* & *Chapman EG* 8587 (FHO). Mchese Mt., Napolo Valley, *Chapman JD* & *Chapman EG* 8672 (FHO).

***Mimusops zeyheri* Sond.**

Tree, up to about 18 m high. Leaves glossy, broadly elliptic, with long petioles. Flowers creamy-white, slightly fragrant. Fruits fleshy, ellipsoid, yellow.

**Flowering:** November. **Fruiting:** May-July. **Habitat:** Forest, especially on rocky river banks. **Altitude:** 700-1200 m.

**Occurrence:** Common. **Distribution:** Tanzania to South Africa (Transvaal, KwaZulu-Natal), Swaziland and Angola.

**Localities:** Likulezi River, near Likulezi farm, *Chapman JD* & *Chapman EG* 7434 (FHO). Below Chambe Peak, *Chapman JD* & *Chapman EG* 7597 (FHO). Phalombe River, *Chapman JD* & *Chapman EG* 7879 (FHO). Likabula Valley, *Chapman JD* & *Chapman EG* 8476 (FHO).

***Synsepalum brevipes* (Baker) T.D.Penn.**

Syn. *Pachystela brevipes* (Baker) Engl.

Tree, up to 20 m high. Bole deeply fluted. Slash slowly exuding latex. Flowers in dense, many-flowered inflorescences. Fruits solitary, fleshy, red when ripe, sweet-tasting.

**Fruiting:** June-November. **Habitat:** Riparian forest, wooded grassland. **Altitude:** 650-1000 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Esperanza, Nakholu Stream (west branch of Pamba Stream), *Chapman JD* & *Chapman EG* 6695 (FHO). Phalombe River, *Chapman JD* & *Chapman EG* 7853 (FHO). Eldorado, along the Thornwood estate boundary above Ciwale Dam, Mimosa Tea Research Station, *Chapman JD* & *Chapman EG* 8413B (FHO). Limbuli, *Chapman JD* & *Chapman EG* 9423 (FHO).

***Synsepalum cerasiferum* (Welw.) T.D.Penn.**

Syn. *Afrosersalisia cerasifera* (Welw.) Aubrév.

Tree, up to about 7 m high, but can be more. Bole deeply fluted at the base. Flowers yellowish-cream in dense clusters. Fruits solitary, red.

**Habitat:** Forest understorey. **Altitude:** c. 650 m.

**Distribution:** Widespread in tropical Africa.

**Localities:** Eldorado, along the Thornwood estate boundary above Ciwale Dam, Mimosa Tea Research Station, *Chapman JD* & *Chapman EG* 8413A (FHO).

***Synsepalum muelleri* (Kupicha) T.D.Penn.**

Syn. *Vincentella muelleri* Kupicha

Tree, up to 20 m high although usually less. Leaves oblong-elliptic. Flowers white suffused with pink, solitary, sessile, borne in the leaf axils and on older wood. Fruits fleshy, ripen pinkish-red.

**Flowering:** September. **Fruiting:** November. **Habitat:** Forest understorey. **Altitude:** 1250-1900 m. **Distribution:** S. Malawi and neighbouring Mozambique.

**Localities:** Lichenya Plateau, Nessa Path, *Chapman JD* & *Chapman EG* 7005 (FHO). Chisongeli forest, Muluzi catchment, *Chapman JD* & *Chapman EG* 9339 (FHO). Big Ruo Valley, *Chapman JD* & *Chapman EG* 9383 (FHO). Below the Little Ruo Falls, *Chapman JD* & *Patel IH* 5728 (FHO).

**SCROPHULARIACEAE**

(See also Selaginaceae)

*Refs.* Hepper, 1960, 1986; Saldhana, 1963.

***Alectra orobanchoides* Benth.**

Erect herb, up to about 40 cm high. Leaves small, sessile, lanceolate. Flowers solitary in leaf axils, yellow with thin maroon stripes.

**Flowering:** March. **Habitat:** Stream-fringing bush. **Altitude:** c. 850 m. **Distribution:** East Africa, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa, Namibia and Angola.

**Localities:** Likabula Valley, *Chapman JD* & *Chapman EG* 9002 (FHO).

***Alectra sessiliflora* (Vahl) Kuntze**

var. *senegalensis* (Benth.) Hepper

Erect annual herb, up to 30 cm or more high. Stems covered in coarse, white hairs. Leaves ovate, sessile, spreading. Flowers yellow.

**Flowering:** April. **Fruiting:** April. **Habitat:** Along paths in montane grassland. **Altitude:** c. 2000 m. **Occurrence:** Sporadic. **Distribution:** Widespread in tropical Africa.

**Localities:** Lichenya Plateau to Chambe Saddle, *Chapman JD* & *Chapman EG* 9065 (FHO).

***Buchnera hispida* Buch.-Ham. ex D.Don**

Slender, annual herb, up to 1 m high but averaging less. Stems rough, especially at the top. Leaves lanceolate. Flowers purple.



**Flowering:** July. **Habitat:** Wooded grassland. **Altitude:** c. 1400 m. **Distribution:** Widespread in tropical and sub-tropical Africa.

**Localities:** Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9248* (FHO).

***Buchnera lastii* Engl. ssp. *lastii***

Syn. *Buchnera similis* Skan

**Herb**, up to 45 cm high from a woody rootstock.

**Leaves** mostly opposite, linear. **Flowers** white or mauve in slender, compact spikes.

**Flowering:** January-June. **Habitat:** Montane grassland, especially on the fire breaks. **Altitude:** c. 1800 m. **Occurrence:** Abundant. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Lichenya Plateau, *Chapman JD 5650*, *Chapman JD & Chapman EG 9477* (FHO).

***Cynium adonense* Benth.**

Compact, perennial **herb**, up to 20 cm or more.

**Leaves** lanceolate, toothed. **Flowers** large, white with a long **corolla** tube (up to 95 mm).

**Flowering:** October. **Habitat:** Short grass on farm fallow. **Altitude:** c. 1200 m. **Distribution:** Tropical Africa.

**Localities:** Nanchidwa Valley below Chisongeli Forest, *Chapman JD & Chapman EG 9365* (FHO).

***Diclis tenella* Hemsl.**

Delicate, prostrate or decumbent **herb**, up to 10 cm high. Whole plant softly hairy. **Flowers** white with purple markings at the throat, long spur.

**Flowering:** March-July. **Habitat:** Under overhanging rocks in forest and montane grassland. **Altitude:** 1150-2450 m. **Occurrence:** Gregarious. **Distribution:** Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Mchese Mt., Napolo Valley, *Chapman JD & Chapman EG 8718* (FHO). Namitambo Valley, below the rim of Chambe Basin, *Chapman JD & Chapman EG 9550* (FHO). Slopes of Manene Peak, overlooking the Madzeka Valley, *Chapman JD & Patel IH 5754* (FHO).

***Digitalis purpurea* L.**

**Herb**, up to 2 m high. **Flowers** white or pale purple, in **spikes**.

**Flowering:** December. **Habitat:** Montane grassland, especially when not burnt for several years. **Altitude:** c. 2000 m. **Occurrence:** Locally abundant. **Distribution:** Widespread. **Comments:** This species is introduced and naturalized, but not invasive.

**Localities:** Linji (upper Lichenya) Plateau, *Chapman JD 6049* (FHO).

***Halleria elliptica* Thunb.**

**Shrub** or small tree, up to 5-6 m high, occasionally more. **Leaves** broadly elliptic-ovate, margin remotely denticulate and slightly inrolled. **Flowers** orange, tubular. **Fruits** globular, yellowish-orange.

**Flowering:** Much of the year. **Fruiting:** Similar. **Habitat:** Forest margins, montane grassland, rocky streambanks, scrub. **Altitude:** 1250-2450 m. **Occurrence:** Common but scattered. **Distribution:** Mt. Mulanje in S. Malawi, Mozambique (Z. and MS) and South Africa.

**Localities:** West branch of the Chitakali Stream, *Chapman JD & Chapman EG 6883* (FHO). Lichenya to Knife-Edge, path below the West Peak, *Chapman JD & Chapman EG 8537* (FHO). Mchese Mt., on the spur separating the head of the Napolo gorge from the Namajani, *Chapman JD & Chapman EG 8698* (FHO). Headwaters of the Mulosa River, Naikoto Valley, *Chapman JD & Chapman EG 8802A* (FHO). Big Ruu Basin, *Chapman JD & Chapman EG 9379* (FHO). Manene Peak, *Chapman JD & Patel IH 5772* (FHO). Lichenya Plateau, *Chapman JD & Tawakali EJ 5530* (FHO).

***Harveya huillensis* Hiern**

Semi-parasitic **herb** with a slender stem, up to about 15 cm high. **Leaves** small. **Flowers** pinkish-purple with a white throat, greenish-yellow at the base.

**Flowering:** March. **Habitat:** On gravelly soil amongst grass in *Brachystegia* woodland. **Altitude:** 1000-1300 m. **Distribution:** Ethiopia, Sudan, East Africa, Malawi and Madagascar.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8993* (FHO). Sombani Path from Fort Lister, *Goyder DJ & Paton AJ 3651* (K).

***Lindernia oliveriana* Dandy**

**Herb**, up to about 30 cm high. **Leaves** sessile and opposite. **Flowers** blue.

**Flowering:** June. **Habitat:** Marshes, grass on roadside. **Altitude:** c. 700 m. **Distribution:** Nigeria, Ethiopia, Sudan, D.R. Congo, Zambia, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Likabula, *Richards HM 16700* (K).

***Scoparia dulcis* L.**

Woody perennial or **sub-shrub**, up to 1 m high. **Leaves** in whorls of 3. **Flowers** white.

**Flowering:** March. **Habitat:** Weed of tea estates. **Altitude:** c. 650 m. **Distribution:** Widespread.

**Localities:** Eldorado-Thornwood boundary, *Chapman JD & Chapman EG 8415* (K).

***Sopubia mannii* Skan**

var. *tenuifolia* (Engl. & Gilg) Hepper

Perennial **herb**, up to 150 cm high. **Leaves** and flowers loosely arranged on the stem. **Flowers** pink.

**Flowering:** June. **Habitat:** Among rocks and rough grass. **Altitude:** c. 2300 m. **Distribution:** Sierra Leone, East Africa, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Angola.

**Localities:** Cilemba Peak, *Richards HM 16565* (K).

***Sopubia ramosa* (Hochst.) Hochst.**

Erect, perennial **herb**, up to 1 m high. **Stems** branched above. **Leaves** linear to linear-



lanceolate. Flowers pale to deep pink in whorls of 3-4.

**Flowering:** March-April. **Habitat:** Miombo woodland and grassland. **Altitude:** c. 1000 m. **Distribution:** West and Central Africa, Ethiopia, Sudan, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, Chapaluka road, *Chapman JD & Chapman EG 7351* (K).

*Sopubia simplex* (Hochst.) Hochst.

Perennial herb, up to 45 cm high. Stems many-ribbed. Leaves few, appressed to the stem. Flowers pink.

**Flowering:** September. **Fruiting:** September. **Habitat:** Burnt grassland. **Altitude:** c. 1900 m. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Lichenya Plateau, *Pawek J 3878* (K).

*Striga angustifolia* (D.Don) C.J.Saldahna

Annual herb, up to 20-50 cm high, with a bushy habit and small, narrowly linear leaves. Flowers white, hairy outside.

**Flowering:** February-March. **Fruiting:** February-March. **Habitat:** On seepage rocks in short grass or with sedges. **Altitude:** 1000-1050 m. **Occurrence:** Locally common. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Saturi Stream, at the Lichenya path, Likabula Valley, *Chapman JD & Chapman EG 7186* (K). Likabula Valley, *Chapman JD & Chapman EG 9000* (FHO, K).

*Torenia latibracteata* (Skan) Hepper

var. *parviflora* Philcox

Erect, annual herb, up to 35 cm high. Leaves opposite, sessile, ovate to ovate-lanceolate. Flowers blue, few, in terminal heads.

**Flowering:** June. **Habitat:** In a ditch at the roadside. **Altitude:** c. 700 m. **Distribution:** Zambia, Malawi and Mozambique.

**Localities:** Likabula, *Richards HM 16699* (K).

approaching Chinzama Hut on the path from Minunu Hut, *Strugnell AM et al. 101* (FHO).

*Selago thomsonii* Rolfe

var. *caerulea* (Rolfe) Brenan

Syn. *Selago blantyrensis* Rolfe; *Selago caerulea* Rolfe

Herb or sub-shrub, up to about 50 cm high. Leaves linear-lanceolate, 2-5 mm wide. Flowers mauve.

**Flowering:** June-August. **Habitat:** *Brachystegia* woodland and montane grassland. **Altitude:** 1500-1700 m. **Distribution:** Tanzania, Malawi, Mozambique.

**Localities:** Sombani path, *Iwarsson M & Ryding O 792* (K).

*Selago thomsonii* Rolfe

var. *thomsonii* (Rolfe) Brenan

Syn. *Selago johnstonii* Rolfe; *Selago holstii* Rolfe

Herb or sub-shrub, up to 50 cm high. Leaves very small, linear-lanceolate, 1-1.5 mm wide. Flowers mauve in rounded heads.

**Flowering:** March-August. **Habitat:** Montane grassland along the paths, in short grass in low woodland. **Altitude:** 1500-2000 m. **Occurrence:** Locally common. **Distribution:** Kenya, Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Phalombe Gorge, *Chapman JD & Chapman EG 7829* (K). Madzeka Basin, *Chapman JD & Chapman EG 8806* (FHO).

*Selago thomsonii* Rolfe

var. *whyteana* (Rolfe) Brenan

Syn. *Selago whyteana* Rolfe; *Selago milanjensis* Rolfe

Herb or sub-shrub, up to 60 cm high. Leaves filiform and long, less than 1 mm wide. Flowers mauve in lax heads.

**Flowering:** January-June. **Habitat:** Pathsides and disturbed soil in grassland and woodland. **Altitude:** 1300-2000 m. **Occurrence:** Locally common. **Distribution:** Tanzania and Malawi.

**Localities:** Lichenya Hut, *Chapman JD 5611* (FHO, K). Chapaluka track, Likabula Valley, *Chapman JD & Chapman EG 7108* (FHO). Likabula Valley, on the C.C.A.P. path, *Chapman JD & Chapman EG 7266* (K).

SIMAROUBACEAE

*Harrisonia abyssinica* Oliv.

Prickly, scandent shrub or small tree, up to 8 m high. Leaves pinnate, leaflet margins crenate-serrate. Rhachis narrowly winged. Flowers white to yellow. Fruits ripening red.

**Fruiting:** January-February. **Habitat:** In or at the edge of riparian forest. **Altitude:** 700-1000 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Mchese Mt., Phalombe area, *Chapman JD 582* (FHO). Nasato Stream, between Glenorchy & the Likabula River, *Chapman JD & Chapman EG 7039* (FHO). Likulezi River, near Likulezi Farm, *Chapman JD & Chapman EG 7433* (FHO). Phalombe Stream, *Chapman JD & Chapman EG 7809* (FHO).

SELAGINACEAE

(included in Scrophulariaceae in *Flora Zambesiaca*).

*Hebenstretia angolensis* Rolfe

Perennial herb or shrub, up to about 90 cm high. Leaves narrowly linear, crowded at the ends of the shoots. Flowers small, white with orange mark at the throat, in spikes.

**Flowering:** April-September. **Habitat:** Montane grassland. **Altitude:** c. 1900-2050 m. **Occurrence:** Scattered. **Distribution:** Ethiopia, Sudan and Somalia to South Africa, Lesotho and Angola.

**Localities:** Below Thuchila Hut, *Brummitt RK 9626* (K). Thuchila Shelf, *Chapman JD 5679* (FHO). Ruu Basin,



***Kirkia acuminata* Oliv.**

Small, deciduous tree, up to 16 m high. Leaves pinnate. Leaflets sessile, narrowly ovate, tapering to a long point, margin crenate. Flowers pale green to cream. Fruits brown and dry when ripe, split mericarps remain attached at the top of the central axis.

**Fruiting:** May-July. **Habitat:** Miombo woodland. **Altitude:** c. 1150 m. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal), Namibia and Angola.

**Localities:** Mchese Mt., Nampende Stream, *Chapman JD & Chapman EG 9124* (FHO).

**SOLANACEAE**

***Solanum anguivi* Lam.**

Spiny shrub, up to 2 m high. Spines laterally compressed. Leaves lobed with an asymmetrical base, hairy on both surfaces but densely stellate-hairy below. Fruits spherical, bright orange.

**Fruiting:** June. **Habitat:** Rocky slopes above the trees. **Altitude:** c. 1300 m. **Distribution:** Widespread.

**Localities:** Head of the Namajani Stream, Mchese Mt., *Chapman JD & Chapman EG 8617* (FHO).

***Solanum giganteum* Jacq.**

Small tree, up to about 3 m high. Stems densely white tomentose, with tiny scattered prickles. Leaves entire, elliptic, lower surface white-tomentose. Flowers bluish-purple. Fruits red.

**Flowering:** September. **Habitat:** Forest gaps and edges. **Altitude:** c. 1350 m. **Occurrence:** Local. **Distribution:** Widespread in tropical Africa and South Africa.

**Localities:** Phalombe Gorge, *Chapman JD & Chapman EG 8878* (FHO).

***Solanum seaforthianum* Andr.**

Annual, herbaceous scrambler without spines. Leaves deeply divided almost to the midrib, glabrous. Flowers purplish-blue. Fruits juicy, ripening scarlet.

**Flowering:** January. **Fruiting:** January-May. **Habitat:** Edge and in riparian forest. **Altitude:** c. 800 m. **Distribution:** An introduced species from Central America and the West Indies that has become naturalized in Africa.

**Localities:** Linji Stream, at the Likabula Estate, *Chapman JD & Chapman EG 7018* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8541*.

***Solanum terminale* Forssk.**

Woody climber, twining as far as the forest canopy. Without spines. Leaves entire, ovate, glabrous. Flowers pale blue. Fruits orange.

**Flowering:** October. **Habitat:** Forest regrowth. **Altitude:** c. 900 m. **Distribution:** Widespread in Africa.

**Localities:** Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6740* (FHO).

***Solanum torvum* Sw.**

Spiny shrub, up to 4 m high. Spines laterally compressed. Leaves truncate or lyrate at the base. Corolla about 1 cm long. Fruit 1 cm in diameter.

**Fruiting:** August. **Habitat:** Forest edge or regrowth. **Altitude:** c. 800 m. **Distribution:** Widespread. **Comments:** Originating from Central America and the Caribbean, now a pantropical weed.

**Localities:** The Crater, *Dowsett-Lemaire F 172* (BR).

***Solanum* sp.**

Shrub, 5 m high. Apparently unarmed. Leaves entire, broadly ovate to slightly angular. Stems, petioles and leaves stellate-hairy. Flowers white, with bright yellow stamens.

**Flowering:** September. **Habitat:** Forest edge, beside a water channel. **Altitude:** c. 850 m.

**Localities:** Crater entrance, *Chapman JD & Chapman EG 6491* (FHO).

**STERCULIACEAE**

*Refs. Seyani, 1988, 1991.*

***Cola greenwayi* Brenan**

Canopy tree, up to 30 m high, although can be smaller. Leaves elliptic, pointed, with a long petiole (more than 2 cm). Flowers deep cream with maroon speckling, densely hairy outside. Fruits globose, covered with rusty-brown, stellate hairs.

**Flowering:** October. **Fruiting:** November. **Habitat:** Evergreen forest. **Altitude:** 850-1600 m. **Occurrence:** Common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and South Africa (Transvaal, KwaZulu-Natal).

**Localities:** Mulosa Stream, at entrance to Lauderdale Crater, *Chapman JD 6517* (FHO). Above Esperanza, at top of west branch of Nakolu (Pamba) Stream, *Chapman JD & Chapman EG 6692* (FHO). Nakolu Stream, above Lauderdale, *Chapman JD & Chapman EG 6746* (FHO). Likabula Valley, at source of Nasato Stream, *Chapman JD & Chapman EG 7316* (FHO). Entrance to the Phalombe Gorge, *Chapman JD & Chapman EG 7870* (FHO). Mchese Mt., Nthambi Gorge above Misomali, *Chapman JD & Chapman EG 8833* (FHO). Chambe West Face Shelf, *Chapman JD & Chapman EG 8984* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9179* (FHO).

***Cola mossambicensis* Wild**

Understorey or canopy, evergreen tree, up to 25 m high. Young stems and petioles with a dense, floccose, pale brown indumentum. Leaves large, obovate-elliptic, distinctly 3-nerved at the base, with a long petiole. Fruits globose, densely hairy.



**Fruiting:** October. **Habitat:** Lowland and riparian forest. **Altitude:** 500-900 m. **Occurrence:** Rare. **Distribution:** Malawi and Mozambique.

**Localities:** Pamba Stream, above Esperanza, *Chapman JD* 6663 (FHO). Lichenya F.R. beside the Lichenya river, T.A. Mabuka's, Milonde Court, *Chapman JD & Chapman EG* 6581 (FHO). Above Lauderdale, along the Nakolu Stream, *Chapman JD & Chapman EG* 6755 (FHO). Chitakali Stream, *Chapman JD & Chapman EG* 6926 (FHO).

*Dombeya burgessiae* Gerrard ex Harv.

**Shrub** up to 4 m high. **Leaves** broad, 3-5 lobed, hairy on both surfaces. **Flowers** large, pale pink, in axillary inflorescences.

**Flowering:** May-June. **Habitat:** Forest edge, forest regrowth, *Brachystegia* woodland. **Altitude:** 1100-1200 m. **Distribution:** From Rwanda, Uganda and Kenya to South Africa (Transvaal, KwaZulu-Natal) and Swaziland.

**Localities:** Likulezi, Ng'ono valley, *Chapman JD & Chapman EG* 7524 (FHO). Below Chambe West Face, *Chapman JD & Chapman EG* 7763 (FHO).

*Dombeya rotundifolia* (Hochst.) Planch.

**Shrub** or small tree, up to 8 m high. **Leaves** large, rounded, cordate at base. **Flowers** white, sweet smelling, often appearing before the leaves.

**Flowering:** August. **Habitat:** *Brachystegia* woodland. **Altitude:** 750-1100 m. **Occurrence:** Sporadic. **Distribution:** From East Africa and the D.R. Congo to South Africa (Transvaal, KwaZulu-Natal), Swaziland and Namibia.

**Localities:** Between Likabula & Thuchila, *Chapman JD* 413 (FHO). Mulanje foot, *Chapman JD & Chapman EG* 7978 (FHO). Mchese Mt., Napolo Stream above Fort Lister road, *Chapman JD & Chapman EG* 8811 (FHO). Near the Likabula timber depot, *Clements JB* 113 (FHO).

*Dombeya torrida* (J.F.Gmel.) Bamps

ssp. *erythroleuca* (K.Schum.) Seyani  
Syn. *Dombeya erythroleuca* K. Schum.

Canopy **tree** up to 30 m high. **Leaves** ovate, deeply cordate at the base. **Flowers** creamy-white with fine red lines.

**Flowering:** June-July. **Habitat:** Montane forest. **Altitude:** c. 1700 m. **Occurrence:** Locally common. **Distribution:** Sudan and Ethiopia to Malawi.

**Localities:** Mchese Mt., Nampende Valley (east), *Chapman JD & Chapman EG* 9141 (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG* 9228 (FHO).

*Sterculia africana* (Lour.) Fiori

Deciduous **tree**, up to about 18 m high with a stout trunk. **Leaves** broadly ovate, cordate at the base, almost entire or 3-5-lobed. **Flowers** appear before the leaves.

**Habitat:** Rocky hillside. **Altitude:** c. 800 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and Namibia.

**Localities:** Chikomwe Hill, Likulezi R.C. Catechist Training Centre, *Chapman JD & Chapman EG* 7674 (FHO).

*Sterculia quinqueloba* (Garcke) K.Schum.

Deciduous **tree**, up to 10 m, or sometimes 25 m, high. **Bark** smooth, peeling off in papery flakes. **Leaves** 5-lobed, deeply cordate at the base, densely greyish-tomentose on lower surface. **Flowers** appearing with the young leaves.

**Flowering:** April-May. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Local. **Distribution:** From the D.R. Congo and Tanzania to Mozambique, Zimbabwe and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG* 7443 (FHO).

## TACCACEAE

*Tacca leontopetaloides* (L.) Kuntze

Robust **herb**, up to 1.5 m high. **Leaves** 1-3, large, very deeply divided almost to the midrib. **Flowers** green tinged with purple, in many-flowered heads.

**Habitat:** A weed of cultivated plots. **Altitude:** c. 600 m. **Distribution:** Throughout tropical Africa.

**Localities:** Near Malawi Tea Factory, *Chapman JD & Chapman EG* 8295 (MO).

## THYMELAEACEAE

Refs. Breteler, 1994; Peterson, 1976.

*Gnidia chapmanii* B.Peterson

Erect **shrub**, up to 3 m high. **Leaves** sessile, glabrous, bunched towards the top of the stem. **Flowers** golden yellow, in terminal heads. No petals.

**Flowering:** May-September. **Habitat:** Forest edge or montane grassland amongst rocks, shrubs or at edge of fire breaks. **Altitude:** 1200-2000 m. **Occurrence:** Sporadic to locally abundant. **Distribution:** Mt. Mulanje in Malawi and Mt. Namuli in Mozambique.

**Localities:** Big Ruu Basin, *Chapman JD* 425 (FHO). Chambe West Face Shelf approach, *Chapman JD & Chapman EG* 7653 (FHO). Western slopes of Mchese Mt., Chandamwani Gorge, *Chapman JD & Chapman EG* 8579 (FHO). Mchese Mt., on spur between the Napolo & Nanajani Streams, *Chapman JD & Chapman EG* 8699 (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG* 9240 (FHO). Above Limbuli, *Chapman JD & Chapman EG* 9273 (FHO). Madzeka Valley, *Chapman JD & Patel IH* 5720 (FHO). Top of the Big Ruu Valley, *Strugnell AM et al.* 44 (FHO).

*Gnidia fastigiata* Rendle

**Herb**, up to about 30 cm high, with several upright stems growing from a woody rootstock. **Leaves** small, lanceolate, sessile, stiff. **Flowers** small, white.



**Flowering:** August-October. **Habitat:** Montane grassland. **Altitude:** 1800-2100 m. **Occurrence:** Sporadic. **Distribution:** Kenya, Uganda, Tanzania, Malawi and Zimbabwe. **Localities:** Thuchila Shelf, *Chapman JD & Tawakali EJ 5967* (FHO). Sombani Basin, *Chapman JD & Chapman EG 8908* (FHO). Ruo Basin, *Strugnell AM 90* (FHO).

***Peddiea africana* Harv.**

Syn. *Peddiea fischeri* Engl.

**Tree**, up to 13 m high. **Leaves** elliptic. **Flowers** greenish, tinged with maroon. **Fruits** fleshy, black.

**Flowering:** December. **Habitat:** Forest understorey. **Altitude:** c. 1800 m. **Occurrence:** Very sporadic. **Distribution:** Highlands of West Africa, Central and East Africa, south to the eastern Cape in South Africa.

**Localities:** Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9446* (FHO).

***Synaptolepis alternifolia* Oliv.**

Small **shrub**, up to 50 cm high or woody climber. **Bark** reddish brown or black, lenticellate. **Leaves** elliptic, very pale beneath. **Flowers** small, white with a long **corolla** tube, sweet-smelling. **Fruit** fleshy, ovoid, ripening red.

**Flowering:** December. **Fruiting:** January-May. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1150 m. **Occurrence:** Common but sporadic. **Distribution:** Tanzania, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula River, at the forestry depot, *Chapman JD & Chapman EG 7134* (FHO). Likulezi River, below the gorge, *Chapman JD & Chapman EG 7731* (FHO). Likabula Valley, near the junction of the Nakaye Stream with the Likabula River, *Chapman JD & Chapman EG 8480* (FHO). Western slopes of Mchese Mt., Namajani Valley, *Chapman JD & Chapman EG 8610* (FHO).

**TILIACEAE**

***Glyphaea tomentosa* Mast.**

Small **tree**, up to about 4 m high. **Leaves** oblong, 3-nerved from the base. **Flowers** yellow. **Fruits** hard and woody, oblong-cylindric, deeply longitudinally ridged.

**Fruiting:** April. **Habitat:** Riparian forest. **Altitude:** c. 550 m. **Distribution:** Mt. Mulanje, Malawi and Mozambique.

**Localities:** Lichenya F.R., T.A. Mabuka's Milonde Court, just above the junction of the Lichenya and Ruo Rivers, *Chapman JD & White F 8425* (FHO), *White 14178* (BR).

***Grewia flavescens* Juss.**

**Shrub**, up to 5 m high. **Leaves** oblanceolate with irregularly serrated margins, roughly hairy. **Flowers** yellow. **Fruits** subglobose, shallowly 4-lobed.

**Fruiting:** May. **Habitat:** Stream-fringing vegetation. **Altitude:** c. 600 m. **Distribution:** Throughout tropical Africa, South Africa (Transvaal) and Namibia.

**Localities:** Likulezi Stream, near the bridge on the Phalombe road, *Chapman JD & Patel IH 5798* (FHO).

***Grewia micrantha* Bojer**

**Shrub** or small tree, up to 13 m high. **Leaves** ovate-oblong to elliptic, rough-textured, whitish below with brown veins. **Flowers** yellow. **Fruits** yellow, globose, 1-2 lobed, pubescent.

**Fruiting:** July. **Habitat:** *Brachystegia* woodland. **Altitude:** 800-1050 m. **Occurrence:** Occasional. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe and Madagascar.

**Localities:** Near Likabula, *Chapman JD 339* (FHO). Mchese Mt., where forest boundary crosses the Manyo Stream, *Chapman JD 339b* (FHO). Below the Linji cliffs, Likabula coffee estate, *Chapman JD & Chapman EG 7013* (FHO). Likulezi Valley, above the gorge, *Chapman JD & Chapman EG 7771* (FHO).

***Grewia occidentalis* L.**

**Shrub**, up to 4 m high. **Leaves** rhomboid-elliptic, rounded at base. **Fruits** 4-lobed, reddish-purple.

**Fruiting:** March. **Habitat:** In thicket bordering a stream. **Altitude:** c. 1200 m. **Distribution:** Malawi, Mozambique, Zimbabwe, South Africa (Transvaal, KwaZulu-Natal, Cape) and Swaziland.

**Localities:** Below the Linji cliffs, *Chapman JD & Chapman EG 7331* (FHO).

***Grewia stolzii* Ulbr.**

**Shrub** with wide, arching stems. **Leaves** elliptic-oblong, 3-nerved from the base, hairy especially below. **Flowers** white. **Fruits** reddish when ripe, 1-4 lobed, sparsely bristly-hairy.

**Fruiting:** July. **Habitat:** Forest. **Altitude:** c. 1000 m. **Distribution:** E. D.R. Congo, Kenya, Uganda, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likulezi Valley, *Chapman JD & Chapman EG 7770* (FHO).

***Sparmannia ricinocarpa* (Eckl. & Zeyh.) Kuntze**

**Shrub**, up to 3 m high with slender stems. **Leaves** 5-7 lobed, lobed to about halfway, hairy. **Flowers** white with a pale mauve calyx. **Fruits** ellipsoid, covered with rigid bristles.

**Flowering:** June. **Fruiting:** June. **Habitat:** Forest edge. **Altitude:** 1450-1850 m. **Distribution:** Cameroon, Ethiopia southwards to the eastern Cape in South Africa.

**Localities:** Fort Lister forestry office to Sombani, *Chapman JD & Chapman EG 8356* (MO). Western side of Mchese Mt., below the Dome, *Chapman JD & Chapman EG 8576* (FHO).

***Triumfetta pilosa* Roth**

var. *effusa* (E.Mey. ex Harv.) Wild

Low **shrub**, up to c. 1 m high. **Leaves** ovate to lanceolate, stellate-hairy on both surfaces. **Flowers** yellow. **Fruits** with glabrous protuberences.



**Flowering:** December. **Fruiting:** January. **Habitat:** *Brachystegia* woodland and low brush on rocky slopes and pathsides. **Altitude:** c. 2000 m. **Distribution:** Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** West slope of Mulanje, *Brass LJ 16865* (K). Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9873* (K). Likabula Valley on the Lichenya path, *Chapman JD & Chapman EG 6995* (FHO).

*Triumfetta pilosa* Roth  
var. *nyasana* Sprague & Hutch.  
Similar to var. *effusa* but the protuberences of the fruit are hairy.

**Fruiting:** August. **Habitat:** Forest edge and opening in exploited cedar forest. **Altitude:** c. 1800 m. **Occurrence:** Common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe. **Localities:** Likabula Valley, *Chapman JD 516* (K). Phalombe Gorge, *Chapman JD & Chapman EG 7936* (FHO).

*Triumfetta rhomboidea* Jacq.  
Soft-wooded shrub up to 1.5 m high. Leaves ovate-lanceolate, simple or 3-lobed. Flowers yellow.  
**Flowering:** March-April. **Habitat:** *Brachystegia* woodland or *Eucalyptus* plantations. **Altitude:** 800-1200 m. **Distribution:** Widespread. **Localities:** Foot of Mchese Mt., Fort Lister Gap, *Brummitt RK & Banda EA 9884* (K). Top end of Esperanza, *Chapman JD & Chapman EG 7324* (FHO, K).

*Triumfetta tomentosa* Bojer  
Sub-shrub, up to 1.5 m high. Leaves lanceolate-ovate with irregularly-serrated margin, greyish-tomentose below. Flowers small, yellow.  
**Flowering:** March. **Habitat:** Woodland. **Altitude:** c. 850 m. **Distribution:** Throughout tropical Africa. **Localities:** Likabula Valley, *Chapman JD & Chapman EG 9004* (FHO).

*Triumfetta welwitschii* Mast. var. *welwitschii*  
Perennial herb growing from a woody rootstock. Leaves linear-lanceolate, softly hairy. Flowers yellow.  
**Habitat:** Woodland and grassland. **Distribution:** From S.W. Tanzania to South Africa (Transvaal) and Angola. **Localities:** Mt. Mulanje, *Whyte A 163* (K).

ULMACEAE

*Celtis africana* Burm.f.  
Deciduous tree, up to 30 m high. Slender bole with pale grey bark. Leaves very asymmetric at the base, prominently 3-nerved at the base, margin serrated. Fruit subglobose, orange, hairy.  
**Fruiting:** November. **Habitat:** Riverine forest. **Altitude:** 1000-1500 m. **Distribution:** Widespread in Africa.

**Localities:** Likulezi River Gorge, *Chapman JD & Chapman EG 7769* (FHO). Foot of the Phalombe Gorge, *Chapman JD & Chapman EG 7833A* (FHO). Chiphalombe River, above the first gorge, *Chapman JD & Chapman EG 7981* (FHO). Mchese Mt., Nthombi Gorge above Misomali, *Chapman JD & Chapman EG 8827* (FHO). Mchese Mt., Nandiwo Gorge, *Chapman JD & Chapman EG 9102* (FHO).

*Celtis gomphophylla* Baker  
Deciduous tree, up to 25 m high. Leaves hardly asymmetric at the base, several pairs of prominent lateral nerves, mature leaves with entire margin. Flowers small, greenish-yellow. Fruits glabrous, conic-ovoid.

**Flowering:** October. **Habitat:** Low altitude riverine forest. **Altitude:** 550-1350 m. **Distribution:** Localised from the Ivory Coast eastwards to Ethiopia and East Africa, southwards to Angola and the Cape in South Africa. **Localities:** T.A. Mabuka's, Milonde Court, *Chapman JD 6612* (FHO). Mulosa Gorge (to the Crater), *Chapman JD & Chapman EG 6566* (FHO). Lauderdale, *Chapman JD & Chapman EG 6595* (FHO). Between Chitakali & Likabula forestry depot, *Chapman JD & Chapman EG 6963* (FHO). Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9209* (FHO).

*Chaetacme aristata* Planch.  
Shrub or small tree with arching branches, up to 10 m high. Single axillary spine. Leaves elliptic with a bristle-like projecting midrib at the apex. Fruits waxy yellow to orange.  
**Habitat:** Lowland forest and among rocks. **Altitude:** c. 550 m. **Distribution:** Widespread in Africa. **Localities:** Phalombe River, where it crosses the F.R. Boundary, *Chapman JD 564* (FHO). Lichenya River at T.A. Mabuka's, Milonde Court, *Chapman JD 6584* (FHO).

*Trema orientalis* (L.) Blume  
Slender, short-lived tree, up to 15 m high. Leaves thin, oblong-elliptic, rounded to slightly cordate at the base. Fruit black when ripe.  
**Flowering:** October. **Fruiting:** October-December. **Habitat:** Forest edges, forest regrowth and gaps inside forest, disturbed riverine forest. **Altitude:** 610-1100 m. **Distribution:** Throughout Africa south of the Sahara. **Localities:** Entrance to the Crater Gorge, above Lauderdale, *Chapman JD 6590* (FHO). Mulosa Stream, in Lauderdale, *Chapman JD 6599* (FHO). Source of the Nakolu, above Lauderdale, *Chapman JD & Chapman EG 6798* (FHO).

URTICACEAE

Refs. Friis, 1981, 1987, 1989; Friis & Marais, 1982.

*Boehmeria macrophylla* Hornem.  
Syn. *Boehmeria platyphylla* D. Don  
Shrub or herbaceous perennial 2-3 m high. Leaves opposite, lanceolate, serrate margin.



Male and female flowers on separate inflorescences, sessile in dense clusters along the axis.

**Flowering:** October. **Habitat:** In or at the edge of riparian forest. **Altitude:** c. 950 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Above Esperanza, Pamba Stream, *Chapman JD & Chapman EG 6683* (FHO).

*Girardinia diversifolia* (Link) Friis

Robust herb, up to 2 m high, densely covered in stinging hairs. Leaves deeply 3-lobed, coarsely toothed at the margin. Male and female flowers on separate inflorescences. Female inflorescence more compact, densely covered in stinging hairs.

**Flowering:** April. **Habitat:** Forest, especially in clearings or at the edge. **Altitude:** c. 1250 m. **Occurrence:** Gregarious. **Distribution:** Widespread from Senegal to Sudan and Ethiopia, then south to Zimbabwe, South Africa (Transvaal) and Angola.

**Localities:** Likabula Valley, at the source of the Nasato Stream, below Cilemba, *Chapman JD & Chapman EG 7424* (FHO).

*Laportea alatipes* Hook.f.

Herb, up to 1.5 m high with stinging hairs on the stems, leaves and inflorescences. Leaves ovate, alternate, margin toothed.

**Flowering:** December. **Habitat:** Montane forest. **Altitude:** c. 1700 m. **Distribution:** Cameroon; Ethiopia to South Africa (Transvaal, S.W. KwaZulu-Natal, E. Cape Province). **Localities:** Lichenya Plateau, along the Lichenya River, *Chapman JD & Chapman EG 9455* (FHO).

*Laportea mooreana* (Hiern) Rendle

Stinging herb or soft-stemmed shrub, up to 2 m high. Lower flowers whitish-green, upper flowers purplish-green.

**Flowering:** February-May. **Habitat:** In light shade in forest. **Altitude:** 800-1000 m. **Distribution:** Nigeria, Cameroon, D.R. Congo, Central African Republic, Uganda, Tanzania, Malawi, Mozambique, Zimbabwe and Angola.

**Localities:** Ruo Gorge, above the hydroelectric station, *Blackmore et al. 1515* (K). Likabula, *Chapman JD 520* (K). Entrance to the Crater, *Chapman JD 7293* (K).

*Pilea johnstonii* Oliv. ssp. *johnstonii*

Robust herb with thick stems, up to 60 cm high. Leaf broadly ovate, with scattered hairs on the upper surface. Stipules conspicuous. Inflorescences consist of corymbose clusters on long peduncles.

**Flowering:** January-April. **Habitat:** Evergreen forest, often along streams. **Altitude:** 1800-2100 m. **Distribution:** Ethiopia, Sudan, D.R. Congo, Uganda, Kenya, Tanzania, Malawi and Zimbabwe.

**Localities:** Chambe-Lichenya path, *Hilliard OM & Burtt BL 4542* (E, MAL). Near Madzeka Hut, *Thulin M 7819* (MAL, UPS).

*Pilea rivularis* Weddell

Perennial herb, up to 1 m high. Stems succulent, little branched. Leaves opposite, ovate. Inflorescences unisexual. Flowers small and green, in sessile, axillary clusters.

**Flowering:** May. **Habitat:** Forest. **Distribution:** Nigeria, Cameroon, E. D.R. Congo, Rwanda, Burundi, Sudan, Ethiopia, Uganda, Kenya, Tanzania, Malawi, Zimbabwe and South Africa (Transvaal).

**Localities:** Lichenya Plateau, *Chapman JD 5653* (FHO).

*Pouzolzia mixta* Solms

Shrub or small tree, up to 5 m high. Leaves ovate, rough on the upper surface, densely white felted on the lower surface. Inflorescences dense, bisexual, axillary clusters.

**Flowering:** December. **Habitat:** Rocky slopes or river banks. **Altitude:** 850-1150 m. **Occurrence:** Common. **Distribution:** Ethiopia, possibly Sudan, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal, KwaZulu-Natal), Namibia and Angola.

**Localities:** Foot of the Chambe Peak West Face, *Chapman JD & Chapman EG 7092* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8321* (FHO).

*Urera hypselodendron* (A. Rich.) Wedd.

Canopy liane, climbing by abundant adventitious roots. Leaves ovate, margin crenate-dentate. Flowers densely clustered at intervals along the branched inflorescence.

**Flowering:** November. **Habitat:** Forest. **Altitude:** c. 1800 m. **Occurrence:** Common. **Distribution:** From Ethiopia and Sudan to Zambia and Malawi.

**Localities:** Lichenya Plateau, Nessa Path at enumeration plot, *Chapman JD & Chapman EG 8219* (FHO).

*Urera trinervis* (Hochst.) Friis & Immelman

Syn. *Urera cameroonensis* Wedd.

Soft-wooded climber, up to 27 m, with adventitious roots but not so abundant as in *U. hypselodendron*. Leaves elliptic to ovate, margin entire. Flowers small, greenish-white, clustered at intervals in unisexual, branched inflorescences.

**Flowering:** October-November. **Habitat:** Forest. **Altitude:** 850-1200 m. **Distribution:** Widespread in tropical Africa and South Africa (coast of KwaZulu-Natal).

**Localities:** Crater Gorge, Little Mulosa River, *Chapman JD 6628* (FHO). Nakolu Stream where it emerges from its gorge, *Chapman JD & Chapman EG 6763* (FHO). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7341* (FHO).

VALERIANACEAE

*Valeriana capensis* Thunb.

Erect, perennial herb, up to about 40-50 cm high but may reach 1 m. Leaves mainly basal on long



petioles, lanceolate, some verging towards pinnate. Flowers pink in bud, white flushed pink when open.

**Flowering:** July-September. **Habitat:** Montane grassland. **Altitude:** c. 2300 m. **Occurrence:** Occasional. **Distribution:** Kenya and Tanzania to South Africa.

**Localities:** Lichenya Plateau, at the Little Mulosa River just above the Crater lip, *Chapman JD & Chapman EG 8228* (MO). Head of the Ruvo Valley, on the approach to Chinzama Hut, *Strugnell AM et al. 83* (FHO).

## VELLOZIACEAE

### *Xerophyta equisetoides* Baker

Shrub, up to about 1 m high. Leaves linear, up to 8mm wide, bunched at the branch ends. Flowers white to mauve, fragrant.

**Flowering:** October. **Habitat:** Smooth, sloping rock surfaces. **Altitude:** c. 1200 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Namibia.

**Localities:** Beside the Likabula-Lichenya path, *Chapman JD & Chapman EG 8171* (FHO, MO).

### *Xerophyta splendens* (Rendle) N.Menezes

Shrub, up to 2-6 m high, with ascending branches. Leaves linear, up to 2.5 cm wide, bunched at the branch ends. Flowers large, white tinged with purple, fragrant. The leaves and the pedicels are very sticky.

**Flowering:** May-October. **Habitat:** On rocky slopes in upland grassland. **Altitude:** c. 2200 m. **Occurrence:** Widespread. **Distribution:** Only known from Mt. Mulanje.

**Localities:** Chisepu, where the track to Sapitwa leaves the Thuchila-Chambe path, *Chapman JD 5683* (FHO). Descent to the Knife-Edge from Thuchila Shelf, *Chapman JD & Chapman EG 7623* (FHO). Slopes leading to Cilemba Peak, *Chapman JD & Chapman EG 8165* (FHO).

## VERBENACEAE

*Refs. Sales, 2001, Verdcourt, 1992.*

### *Clerodendrum cephalanthum* Oliv.

ssp. *swynnertonii* (S.Moore) Verdc.

var. *swynnertonii*

Syn. *Clerodendrum swynnertonii* S.Moore

Liane climbing by means of prominent, curved, petiole bases. Leaves oblong-elliptic, thin, glabrous. Flowers in capitate inflorescences. Corolla tube 3.5-5.5 cm long, distinctly hairy.

**Flowering:** March. **Habitat:** Edge of stream-fringing forest. **Altitude:** c. 1200 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** The Crater, *Müller T 1544* (K). Likabula Valley, source of the Nasato Stream, *Chapman JD & Chapman EG 7340* (FHO).

### *Clerodendrum myricoides* (Hochst.) Vatke

Compact shrub, up to 2 m high with numerous highly-branched stems. Leaves broadly elliptic. Flowers bluish-purple, produced when leafless. Fruits black.

**Flowering:** September-November. **Fruiting:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 950 m. **Occurrence:** Sporadic. **Distribution:** Ethiopia to Mozambique and Zimbabwe.

**Localities:** Mchese Mt., above Bwaibwai forest village, *Chapman JD & Chapman EG 8888* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9415* (FHO).

### *Clerodendrum rotundifolium* Oliv.

Semi-woody creeper or small tree, up to 5 m high. Leaves large, opposite, ovate to round. Flowers white, the corolla tube up to 10 cm long.

**Flowering:** March-April. **Habitat:** Woodland and edge of riparian forest. **Altitude:** 800-1250 m. **Distribution:** Sudan, D.R. Congo, Rwanda, Burundi, Kenya, Uganda, Tanzania, Malawi and Mozambique.

**Localities:** Below the Linji cliffs, *Chapman JD & Chapman EG 7334* (FHO). Esperanza, *Chapman JD & Chapman EG 7483* (FHO).

### *Clerodendrum sansibarens* Gürke

ssp. *sansibarens*

Syn. *Clerodendrum quadrangulatum* B.Thomas

Spreading shrub, up to 5 m high. Leaves elliptic-ovate, coarsely serrated in upper half. Flowers purple and white. Fruits red ripening to black.

**Fruiting:** January. **Habitat:** Forest edge. **Altitude:** c. 1250 m. **Distribution:** D.R. Congo, Kenya, Tanzania, Zambia and Malawi.

**Localities:** Foot of Chambe Peak, *Chapman JD & Chapman EG 7057* (FHO).

### *Clerodendrum ternatum* Schinz

Herb or sub-shrub, up to 35 cm high, growing from a woody rootstock. Leaves linear-lanceolate, in whorls of 3. Flowers white with maroon stamens.

**Flowering:** November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Occurrence:** Not common. **Distribution:** Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa, Namibia and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8960* (FHO).

### *Clerodendrum* sp.

Spreading vine. Leaves in 3s, oblong, pointed, irregularly serrated in upper half. Flowers white.

**Flowering:** April. **Habitat:** *Brachystegia* woodland, near a termite mound. **Altitude:** c. 750 m.

**Localities:** Bottom of the Likabula Valley, near the forestry office, *Chapman JD & Chapman EG 9516* (FHO).



*Lantana trifolia* L.

Shrub, up to 1.5 m high or more. Leaves ovate-lanceolate, crenate margin. Fruits purple.

**Fructing:** April. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Occurrence:** Common. **Distribution:** Widespread in Africa but probably introduced from the Americas.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9052* (FHO).

*Lantana viburnoides* (Forssk.) Vahl

ssp. *viburnoides* var. *viburnoides*

Sub-shrub, up to 1.5 m high. Leaves opposite, elliptic-lanceolate, crenate, slightly aromatic. Flowers white. Fruits purple.

**Flowering:** March. **Habitat:** Woodland. **Altitude:** c. 1050 m. **Occurrence:** Occasional. **Distribution:** Ethiopia and Somalia to Mozambique and Angola.

**Localities:** Likabula Valley, Chapaluka track, *Chapman JD & Chapman EG 7353* (FHO).

*Lippia javanica* (Burm.f.) Spreng.

Tall woody herb or shrub, forming clumps up to 3 m across. Whole plant very aromatic. Very small, white flowers in tightly-packed, pyramidal heads. The lower flowers open first.

**Flowering:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1400 m. **Distribution:** Ethiopia to South Africa, including the D.R. Congo and Angola.

**Localities:** Likabula to Chambe path, *Chapman JD 547* (K).

*Vitex buchananii* Gürke

Shrub or small tree, up to 4.5 m high. Leaves 3-5-foliate, softly hairy. Flowers white. Fruits globose, white with a yellow coating of glandular hairs.

**Flowering:** January. **Fructing:** June. **Habitat:** Woodland, transition woodland, forest and forest edge. **Altitude:** 1150-1250 m. **Occurrence:** Very occasional. **Distribution:** Tanzania, Zambia, Malawi and Mozambique.

**Localities:** Foot of Chambe Peak, *Chapman JD & Chapman EG 7056* (FHO). Below Chambe West Face, *Chapman JD & Chapman EG 7761* (FHO). Mchese Mt., Nabwato Valley, *Chapman JD & Chapman EG 9132* (FHO).

*Vitex doniana* Sweet

Tree, up to 15 m or more high. Leaves usually 5-foliate. Leaflets obovate-oblong. Flowers pale mauve. Fruits black.

**Flowering:** November. **Fructing:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** Widespread through tropical Africa.

**Localities:** Likabula/ Thuchila area, *Chapman JD 538* (FHO). Inside the F.R. just across the Chitakali estate boundary, *Chapman JD & Chapman EG 6808* (FHO).

*Vitex mombassae* Vatke

Shrub or small tree, up to 2 m high or more. Leaves 3-5-foliate, pubescent. Flowers blue-

mauve. Fruits globose up to 3 cm in diameter, purple when ripe,

**Fructing:** April. **Habitat:** Rocky outcrops. **Altitude:** c. 1200 m. **Distribution:** D.R. Congo, Burundi, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Angola.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 7468* (FHO).

**VIOLACEAE**

Ref. Grey-Wilson, 1982.

*Rinorea holtzii* Engl.

Shrub or small tree, up to 5 m high with drooping branches. Leaves dark green, narrowly elliptic, bluntly serrated. Flowers white with a long corolla tube.

**Flowering:** September-October. **Habitat:** Forest understorey. **Altitude:** 950-1500 m. **Occurrence:** Common. **Distribution:** Tanzania, Zambia, Malawi and Mozambique.

**Localities:** The Crater, *Chapman JD 611* (FHO). Mulosa Gorge, at the entrance to the Crater, *Chapman JD 6563* (FHO). Source of the Nakolu Stream, *Chapman JD & Chapman EG 6776* (FHO). Chisongeli forest (west), *Chapman JD & Chapman EG 9300* (FHO).

*Viola abyssinica* Oliv.

Creeping herb, rooting at the nodes. Leaves ovate, cordate at the base. Flowers single, white tinged with mauve.

**Flowering:** May-August. **Habitat:** Forest floor and grassland. **Altitude:** 1700-2000 m. **Occurrence:** Locally common. **Distribution:** Cameroon, S. Nigeria, and from Ethiopia to South Africa (Transvaal) and Madagascar.

**Localities:** Sombani Basin, about 1 mile from the forestry hut going towards Madzeka/Chinzama, *Chapman JD & Patel IH 5712* (FHO). Lichenya Plateau, valley below the forestry hut, *Strugnell AM 30* (FHO).

**VISCACEAE**

Refs. Polhill & Wiens, 1997, 1998.

*Viscum combreticola* Engl.

Leafless, dioecious, parasitic shrub. Bright yellowish-green in colour. Internodes flattened and strongly ridged. Male flowers yellow, sessile.

**Flowering:** July. **Habitat:** Woodland. **Altitude:** c. 900 m. **Occurrence:** Common. **Distribution:** D.R. Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana, South Africa (Transvaal) and Angola.

**Localities:** Mchese Mt. foot, Nandiwo Valley, *Chapman JD & Chapman EG 9192* (FHO).

*Viscum congdonii* Polhill & Wiens

Dioecious, parasitic shrub forming long, pendulous masses to 2 m long. Internodes narrow, flattened.



**Habitat:** Riparian forest. **Altitude:** c. 900 m. **Distribution:** Tanzania, Malawi and Zimbabwe. **Comments:** Polhill provisionally places this sterile specimen in *V. congdonii*. (Polhill in White *et al.* 2001).  
**Localities:** Lower slopes above Esperanza, *Chapman JD 6674* (FHO).

*Viscum cylindricum* Polhill & Wiens

Robust, leafless, dioecious parasitic shrub with pendulous stems, up to 1-2 m long.

**Habitat:** Edge of cedar forest. **Distribution:** S. Tanzania and Malawi. **Comments:** Parasitic on *Ochna holstii*. Narrower internodes than *V. combreticola*, wider internodes than *V. shireense*.

**Localities:** Mchese Mt., between Namyo and Namiziwe Streams, *Chapman JD H/661* (FHO).

*Viscum shireense* Sprague

Syn. *Viscum junodii* Engl.

Leafless, dioecious, parasitic shrub becoming pendulous with age.

**Habitat:** Mid-altitude forest and forest edge. **Altitude:** 850-1550 m. **Distribution:** E. D.R. Congo, S. Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Mulosa Stream, at the top of Lauderdale, *Chapman JD 6506* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9224B* (FHO).

*Viscum triflorum* DC.

Syn. *Viscum nervosum* Hochst.

Small, leafy, monoecious parasitic shrub, yellowish-green in colour. Leaves ovate-elliptic, margin crisped.

**Flowering:** August. **Habitat:** Mid-altitude forest. **Altitude:** c. 1550 m. **Occurrence:** Scattered. **Distribution:** Eastern Africa from Ethiopia to South Africa, Angola.

**Localities:** Phalombe River Gorge, *Chapman JD & Chapman EG 7963* (FHO). Mchese Mt., Nampende Valley, *Chapman JD & Chapman EG 9224A* (FHO).

**VITACEAE**

Refs. Dowsett-Lemaire & White, 1990 g; Verdcourt, 1993.

*Cayratia gracilis* (Guill. & Perr.) Suess.

Herbaceous climber, with tendrils opposite the leaves. Leaves pedate, margin coarsely serrate.

**Flowering:** March. **Fruiting:** March. **Habitat:** Cultivated land. **Distribution:** Widespread in tropical Africa.

**Localities:** Swazi, *Faulkner-Kear H 391* (K).

*Cayratia ibuensis* (Hook.f.) Suess.

Herbaceous climber, up to 5 m, with tendrils opposite the leaves. Leaves 3-foliate, dentate margin.

**Habitat:** Riverside vegetation in forest. **Altitude:** 1350 m. **Distribution:** Cameroon, Nigeria, Egypt, Sudan, D.R. Congo, Uganda, Tanzania, Zambia, Malawi, Mozambique and Angola.

**Localities:** Great Ruu Gorge, *Robinson EA 5374* (K).

*Cissus cornifolia* (Baker) Planch.

Flat-topped shrub, up to about 1 m high. Leaves narrowly elliptic, simple with dentate margins, appearing after the flowers. Flowers yellow-green. Fruits ripening blue-black.

**Flowering:** September-November. **Fruiting:** September-November. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** Throughout tropical Africa.

**Localities:** Mchese Mt., western slopes near Bwaibwai village, *Chapman JD & Chapman EG 8879* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8893* (FHO).

*Cissus* aff. *cucumerifolia* Planch.

Soft-stemmed climber, with stems up to 2 cm in diameter. Large leaves, up to 20 cm wide × 20 cm long, 3 to almost 5-lobed. Large, curled, bifid tendrils opposite the leaves. Fruits 2.5 cm long × 2 cm wide, bunched. Peduncle 2 cm long.

**Fruiting:** May. **Habitat:** Amongst rocks, in light shade of stream-bank forest. **Altitude:** c. 950 m. **Distribution:** S. Tanzania, Malawi and Mozambique.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9113* (FHO).

*Cissus petiolata* Hook.f.

Soft-wooded, vigorous climber. Quadrangular stems become corky and 4-winged when older. Leaves large, cordate. Fruits ripen deep red.

**Fruiting:** July. **Habitat:** Stream-fringing forest or miombo woodland. **Altitude:** 750-900 m. **Distribution:** From Guinea to Ethiopia, south to Mozambique, Zimbabwe and Angola.

**Localities:** Chitakali estate boundary, *Chapman JD & Chapman EG 6817* (FHO). Foot of Mchese Mt., Namajani Stream, *Chapman JD & Chapman EG 8652* (FHO). Foot of Mchese Mt., Nampende Village, *Chapman JD & Chapman EG 9164* (FHO).

*Cissus producta* Afzel.

Soft-wooded climber that can reach the canopy. Stems 4-angled. Leaves simple, oblong-elliptic. Fruits black or purplish-red.

**Flowering:** March. **Fruiting:** July. **Habitat:** Lowland forest or forest edge. **Altitude:** 600-800 m. **Distribution:** From Senegal to Uganda and Tanzania, southwards to Zimbabwe and Angola.

**Localities:** Esperanza, *Chapman JD & Chapman EG 7768* (FHO). Mimosa Tea Research Station at the Segregation Plot, *Chapman JD & Chapman EG 8378* (FHO).

*Cyphostemma adenocaula* (A.Rich.) Wild & R.B.Drumm.

Slender herbaceous climber with tendrils. Leaves pedate, 5-foliate. Fruit obovoid, ripening black.

**Fruiting:** March. **Habitat:** Stream-fringing vegetation. **Altitude:** 1000-1200 m. **Distribution:** Widespread in West, Central and East tropical Africa, Malawi and Mozambique.

**Localities:** Below the Linji cliffs, *Chapman JD & Chapman EG 7333* (FHO). Likabula Valley, *Chapman JD & Chapman EG 9009* (FHO).



*Cyphostemma crotalarioides* (Planch.) Wild & R.B.Drumm.

Erect herb, up to 1 m high. Leaves sessile, digitate, 3-foliate. Leaflets obovate, hairy. Fruit ellipsoid.

**Fruiting:** February. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 1000 m. **Distribution:** Benin, Nigeria, Cameroon, Central African Republic, Sudan, D.R. Congo, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9003* (FHO).

*Cyphostemma gigantophyllum* (Gilg & Brandt) Wild & R.B.Drumm.

Sprawling or climbing herb, up to 1-2 m. Leaves large, 3-5-foliate, hairy especially on undersurface. Fruits ellipsoid, covered with long, red, glandular hairs.

**Fruiting:** March. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 9015* (FHO).

*Cyphostemma junceum* (Webb) Wild & R.B.Drumm.

Erect, glabrous herb, up to about 1 m high. Stem and inflorescence-branches reddish-purple with a bloom. Leaves digitate, 3-5-foliate. Leaflets narrow, lanceolate. Flowers yellow. Fruits purple.

**Fruiting:** November-December. **Habitat:** *Brachystegia* woodland. **Altitude:** c. 850 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Likabula Valley, *Chapman JD & Chapman EG 8959* (FHO).

*Cyphostemma kilimandscharicum* (Gilg) Wild & R.B.Drumm. var. *kilimandscharicum*

Herbaceous climber or liane. Leaves 3-foliate, leaflets ovate.

**Habitat:** Forest. **Altitude:** c. 1850 m. **Distribution:** Ethiopia, D.R. Congo, Kenya, Tanzania, Malawi and Zimbabwe.

**Localities:** Foot of Litakala Peak, overlooking the Fort Lister Gap, at the head of the Nandiwo Stream (not the one on Mchese Mt. or Chiphalombe shelf), *Chapman JD & Chapman EG 8592* (FHO).

*Cyphostemma lynesii* (Dewit) Wild & R.B.Drumm.

Climbing or spreading herb. Stems striate, hairy. Leaves digitately 3-foliate with indumentum as the stems. Fruit ellipsoid, black.

**Flowering:** February. **Fruiting:** February. **Habitat:** Woodland. **Distribution:** D.R. Congo, Tanzania, Zambia, Malawi, Mozambique and Zimbabwe.

**Localities:** Likabula Forest Station, *Chapman JD 441* (K).

*Cyphostemma ?masukense* (Baker) Wild & R.B.Drumm. ssp. *masukense*

Soft-stemmed climber. Leaves 5-foliate, digitate, densely hairy on the lower surface. Fruit green, beset with short, bristly (?glandular), red hairs.

**Fruiting:** June-July. **Habitat:** Forest or forest edge. **Altitude:** 1050-1400 m. **Distribution:** S. Tanzania, Malawi and E. Zimbabwe.

**Localities:** Great Ruu Gorge, *Richards HM 16732* (K). Mchese Mt., Mbawa Valley, *Chapman JD & Chapman EG 9202* (FHO).

*Cyphostemma subciliatum* (Baker) Wild & R.B.Drumm.

Herbaceous climber with coiled tendrils. Leaves 3-5-foliate, digitate, sessile or subsessile. Leaflets narrowly elliptic, purplish-green above.

**Flowering:** November-December. **Fruiting:** January. **Habitat:** Edge of riverine vegetation. **Altitude:** c. 800 m. **Distribution:** Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Angola.

**Localities:** Likabula River, at the forestry depot, *Chapman JD & Chapman EG 7132* (FHO). Likabula Valley, *Chapman JD & Chapman EG 8942* (FHO).

*Cyphostemma* sp.

Sprawling or low climbing herb with tendrils. Leaves large, 3-foliate. Leaflets elliptic to oblanceolate, one or more may be partially divided, margin raggedly serrated. Fruit globose, about 2 cm in diameter, red.

**Fruiting:** May. **Habitat:** Miombo woodland. **Altitude:** c. 1000 m.

**Localities:** Mchese Mt., Nandiwo Valley, *Chapman JD & Chapman EG 9080* (FHO).

*Rhoicissus tomentosa* (Lam.) Wild & R.B.Drumm.

Large, canopy liane. Leaves simple, broad, sometimes shallowly lobed, margin scalloped with distinctive points.

**Habitat:** Forest. **Altitude:** c. 1400 m. **Distribution:** Malawi and Mozambique to the Cape Peninsula in South Africa.

**Localities:** Chiphalombe Gorge, *Chapman JD & Chapman EG 7911* (FHO).

*Rhoicissus tridentata* (L.f.) Wild & R.B.Drumm.

Shrubby scrambler. Leaves 3-foliate, softly hairy. Leaflets obovate with truncate apex, margin dentate towards the apex.

**Flowering:** March. **Habitat:** Edge of stream-fringing thick-et. **Altitude:** c. 1200 m. **Distribution:** Widespread through tropical Africa and eastern South Africa.

**Localities:** Below the Linji cliffs, *Chapman JD & Chapman EG 7332* (FHO).



## XYRIDACEAE

Ref. Lock, 1999.

### *Xyris congensis* Büttner

Perennial herb, up to about 85 cm when flowering. Forming clumps. Leaves linear, often twisted. Bracts shiny and brown. Flowers yellow.

**Habitat:** Boggy ground in upland grassland. **Altitude:** c. 1900 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Linji (upper Lichenya) Plateau, near the Linji Falls, *Chapman JD & Chapman EG 7245* (MO). Chambe-Lichenya path, *Hilliard OM & Burt BL 4556* (K).

### *Xyris makuensis* N.E.Br.

Perennial herb forming clumps, up to 25 cm high when flowering. Leaves grass-like. Flowers yellow, peduncle 2-ridged below the flowers.

**Flowering:** October-December. **Habitat:** Seepage areas in upland grassland. **Altitude:** c. 1800 m. **Occurrence:** Locally common. **Distribution:** Mt. Mulanje in Malawi, Gúruè Mts. in Mozambique and possibly Tanzania.

**Localities:** Lichenya Plateau, Lichenya River below the forestry hut, *Chapman JD & Chapman EG 8041* (MO). Lichenya Plateau, Nessa Path, *Chapman JD & Chapman EG 9457* (FHO). Thuchila Shelf, *Chapman JD & Tawakali EJ 5961* (FHO).

### *Xyris obscura* N.E.Br.

Tufted, perennial herb forming dense clumps, up to about 30 cm high when flowering. Leaves linear. Flowers yellow, bracts black.

**Flowering:** February. **Habitat:** Seepage rocks. **Altitude:** c. 2100 m. **Distribution:** Cameroon, Burundi, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, South Africa (Transvaal) and Angola.

**Localities:** Chambe Plateau, *Blackmore S et al. 368* (K).

### *Xyris straminea* L.A.Nilsson

Annual, tufted herb up to 35 cm high when flowering. Leaves linear. Flowers yellow. Bracts yellowish-brown.

**Flowering:** June. **Habitat:** Wet soil, often by streams or old dambos. **Altitude:** 700-1300 m. **Distribution:** Sierra Leone to Kenya, south to South Africa.

**Localities:** Mchese Mt., path from Fort Lister Gap, *Iwarsson M & Ryding O 824* (K). 16 km N.W. of Likabula forestry depot, *Robinson EA 5356* (K).

## ZAMIACEAE

Refs. Chapman, 1989; Osbourne, 1991.

### *Encephalartos gratus* Prain

Cycad with a trunk, up to 6.5 m tall and fronds 2 m long. Median leaflets less than 4.5 cm wide.

Male cones mid-brown. Female cones reddish-brown, up to 60 cm long. Seeds red.

**Habitat:** In rocky ravines beside the river, forest edge, wooded grassland, cultivated plots which were once natural vegetation. **Occurrence:** Sporadic. **Distribution:** Mt. Mulanje, Malawi and Serra Tumbine and Gúruè Mts., Mozambique (also possibly in other locations in Mozambique). **Comments:** Planted as an ornamental on the lower slopes of Mt. Mulanje, in Zomba Botanic Garden and over the border in Milange, Mozambique. The wild populations are fire-sensitive and are becoming reduced in number due to habitat destruction.

**Localities:** Likabula River, above the forestry office, *Blackmore S 861* (K). Also, at the foot of Chambe Peak and the S.E. corner of the massif above Ndala (no specimens but recorded in *Chapman 1989*).

## ZINGIBERACEAE

### *Aframomum albiflorum* Lock

Perennial herb, 2-3 m high. Leaves narrowly elliptic. Inflorescence 2-3 flowered, borne on the rhizome between the leafy shoots. Flowers white.

**Flowering:** October-November. **Habitat:** Stream-fringing forest and *Eucalyptus* plantation. **Altitude:** c. 900 m. **Distribution:** Tanzania, Malawi and Zimbabwe.

**Localities:** Lower slopes of Mt. Mulanje above Esperanza, Nakholu Stream headwater, *Chapman JD & Chapman EG 6681* (FHO). Limbuli, *Chapman JD & Chapman EG 9405* (FHO).

### *Aframomum angustifolium* (Sonn.) K.Schum.

Perennial herb, up to 4 m high. Leaves oblong-elliptic, abruptly acuminate. Inflorescences 1-4 flowered. Flowers red and yellow. Fruits ovoid to subglobose.

**Flowering:** October-November. **Habitat:** Stream-fringing forest. **Altitude:** c. 900 m. **Distribution:** Widespread in tropical Africa.

**Localities:** Lower slopes of Mt. Mulanje above Esperanza, Nakholu Stream headwater, *Chapman JD 6680* (FHO). Muluji River above Chisambo, *Chapman JD & Chapman EG 9412* (FHO).

### *Aframomum zambesiaceum* (Baker) K.Schum. ssp. *zambesiaceum*

Perennial herb, up to 2 m high. Leafy stems in clumps. Leaves broadly lanceolate. Inflorescence 25-50 flowered, arising from the base of the leafy shoots. Flowers creamy-white. Fruit ovoid.

**Fruiting:** July. **Habitat:** *Eucalyptus* plantation. **Altitude:** c. 1300 m. **Distribution:** Cameroon, Nigeria, D.R. Congo, Uganda, Kenya, Tanzania and Malawi.

**Localities:** Fort Lister Gap, below Litakala, *Chapman JD & Chapman EG 8650* (FHO).







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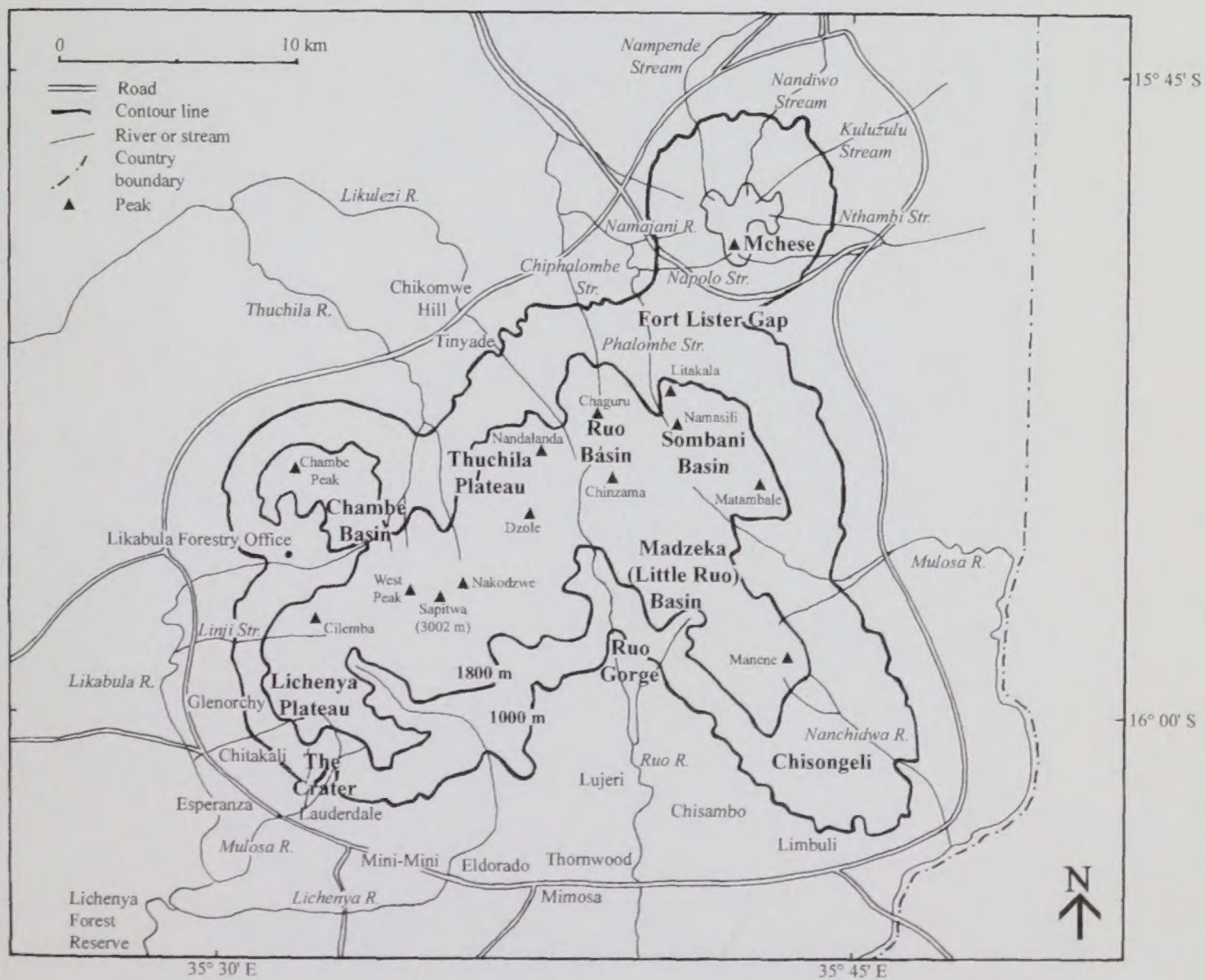
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Map of Mt. Mulanje showing the main collecting localities.



A CHECKLIST OF THE SPERMATOPHYTES  
OF MOUNT MULANJE, MALAWI

A.M. Strugnell



Mt. Mulanje is a centre of plant diversity in Africa in need of protection. Many botanists have visited the massif since the first expedition by Alexander Whyte in 1891 but, to date, there is no inventory of the plants growing on the mountain. In the 1980s, Jim and Betty Chapman spent a prolonged period on the mountain collecting specimens and this provided the core collection for documenting the species growing there. A more complete list was developed by adding records of identified specimens from other herbaria. The present checklist is therefore based on nearly 4000 collections and provides specimen and literature citations as well as brief information on habitat, locality and distribution for each species. A total of 1319 taxa, in 623 genera, have been listed, of which 71 are endemic to the massif. The checklist will be an essential aid for the biodiversity and conservation programmes beginning on the mountain and for botanical research in the region.

Alison Strugnell is Herbarium Manager of the Daubeny Herbarium (FHO), which is part of the Oxford University Herbaria. She began working on the Mt. Mulanje collections in 1986 with Frank White and, after his untimely death, developed the work into this checklist.

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